HSE

Health, Safety and the Environment

SCHOOL OF PHARMACY
HSE MANUAL

07.04.2011

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INTRODUCTION

PREFACE

The University in Oslo, and the Faculty of Mathematics and Natural Sciences, HSE Manuals apply to the School of Pharmacy. The HSE Manual for the School of Pharmacy therefore covers special regulations that apply exclusively to the School, as well as information that is useful for HSE work here.

The Manual contains an organisation chart displaying the responsibility and decision-taking structure in HSE work at the School. Conditions relating to Local Working Environment Committees are described, and references are given to general laws and regulations in the applicable health, safety and environment legislation.

The HSE Manual contains a chapter for each department in the School and for Administration.

The HSE Manual will be updated as required and as agreed with the secretary of the Local Working Environment Committee [L-AMU]. All employees (and students) are responsible for staying updated on the HSE regulations applicable at any time at the School.

School Of Pharmacy
19.12.2008

HSE GOALS AT THE SCHOOL OF PHARMACY

The School of Pharmacy endorses the HSE goals of the University of Oslo (UiO):

In order to achieve its goal of being a leading research university, UiO must also be at the forefront within HSE, with hazards under control, and experiences under continuous development.

Hazards: under control - Experiences: under continuous development

This can be achieved by working towards:

- Working environments for employees and learning environments for students that are completely safe and nurturing
- An organisation that is action-taking, including, and learning
- Buildings that are accessible, functional, and safe
- Operations that are completely safe for the exterior environment

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LEGISLATION

A few central laws that apply to HSE (for additional laws, refer to the HSE Manual for the Faculty of Mathematics and Natural Sciences):

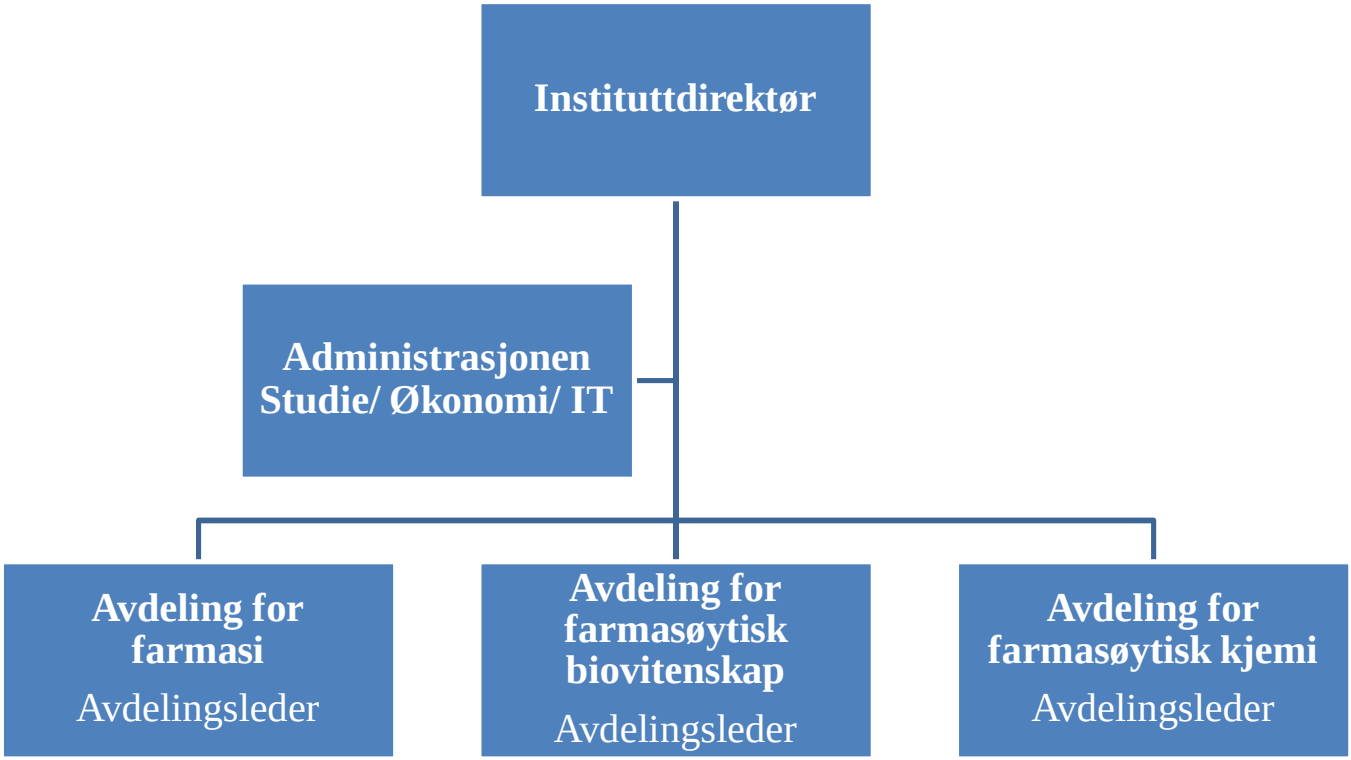
- "Arbeidsmiljøloven [The Working Environment Act]"
- "Lov om tilsyn med elektriske anlegg og elektrisk utstyr [Law of 24 May, 1929 regarding the supervision of electrical installations]"

- "Lov om vern mot brann, eksplosjon og ulykker med farlig stoff og om brannvesenets redningsoppgaver (brann- og eksplosjonsvernloven) [Act relating to the prevention of fire, explosion and accidents involving hazardous substances and the fire service (The Fire and Explosives Act)]"
- "Forurensningsloven [The Pollution Control
- Act]"
- "Genteknologiloven [The Gene Technology Act]"
- "Strålevernloven [Act on radiation protection and use of radiation]"

RESPONSIBILITIES AND DECISION-TAKING STRUCTURE IN HSE ISSUES

In general, an attempt shall be made to resolve HSE-related matters at the lowest possible level in the line, in order to achieve local participation. Responsibility follows the line from the Director, School of Pharmacy to the Head of Department.

The immediate line manager at each level is responsible for ensuring that the instructions are known and complied with. The immediate line manager is a scientific employee in a permanent position with responsibility for own research and/or as student advisor for Master students, research fellows, guest researchers, or who uses technical personnel in their research.



Director of the School of Pharmacy

Administration
Studies/Finances/IT

Department of Pharmacy	Department of Pharmaceutical Biosciences	Department of Pharmaceutical Chemistry
Head of Department	Head of Department	Head of Department

LOCAL WORKING ENVIRONMENT COMMITTEE (L-AMU)

SIZE AND COMPOSITION

- Employer representatives (2):
  Director, School of Pharmacy and one employer representative elected by management.

- Employee representatives (2):
  Head Safety Delegate and one employee representative elected by the employees
- Employer representative for student matters (1):
  Secretary of L-AMU
- Student representative (1):
  One student elected by the Pharmacy Subject Committee.

WORK TASKS

- L-AMU is responsible for updating the School's HSE Manual

HSE MANUALS

The HSE Manuals for UiO, the Faculty of Mathematics and Natural Sciences, and the School of Pharmacy apply to everyone on the premises of the School of Pharmacy. A declaration confirming familiarity with the HSE Manuals and signed by the employee must be archived in the Department. A declaration signed by students undertaking a laboratory-based master thesis, is to be archived with the student advisor responsible for the 2nd department.

HSE TRAINING

The HSE course run by the Faculty of Mathematics and Natural sciences is compulsory for all employees.
Net-based laboratory safety courses are compulsory for all Master thesis students.
The person responsible for the substances and chemicals register can provide training in the use of the net-based substances and chemicals register (HSE datasheet).
All types of training and times are listed on the School's HSE web page.

HSE WEB PAGES

UiO HSE web page: http://www.uio.no/for_ansatte/ansatt/arbeidsmiljo/

Faculty of Mathematics and Natural Sciences web page:
School of Pharmacy HSE web page: http://www.farmasi.uio.no/ansatte/HMS.html

FORMS

Forms can be found via the School of Pharmacy's HSE web page (or in the appropriate HSE Manual).

FIRST AID RULES

GENERAL RULES IN THE EVENT OF INJURY

Immediately inform a member of staff.
In the event of a chemical accident, you must report the chemical(s) involved.

SPLASHES IN THE EYES

Rinse continuously with water, preferably from an eye douching bottle.
Continue rinsing while en-route to the doctor and while waiting at Ullevål University Hospital until seen by a doctor in the Ophthalmology department (Remember to take additional eye douching bottles with you).

SPILLAGE ON SKIN (AND CLOTHES)

Rinse with water for at least 15 mins. Wash with soap and water. Remove soiled clothes, shoes, and jewellery. Skin contact with wet clothes can often cause worse injury than spills directly on the skin.
(Therefore it is important to change disposable gloves frequently.)

SWALLOWING CHEMICALS

- Drink plenty of water (dilution effect). Get medical help.
  Call the Norwegian Poison Information Centre (Giftinformasjonen) (tel. 22 59 13 00).
- If organic solvents, hydrocarbons, etc. are swallowed, give fats such as cooking oil, milk, cream, or ice-cream.
- If organic solvents or corrosive liquids are swallowed, the person must not vomit
  as the fluids can enter the lungs and result in chemical pneumonia.
  NB! Do not give food or drink if the person is unconscious.
- If NaOH (sodium hydroxide) is swallowed, give milk if possible.
- Emetic: 2 dessert spoons of table salt (NaCl, sodium chloride) in a lukewarm glass of water.

INHALATION OF POISONOUS GAS, VAPOUR, OR DUST

- Fresh air and complete rest. Contact the doctor/ambulance.
  If respiration stops, give artificial resuscitation (mouth-to-mouth).

WOUNDS FROM GLASS OR SIMILAR

- Wash the wound thoroughly with cold water to remove any possible contamination and to cool the skin so that the blood vessels contract. Try to stop/reduce the bleeding by applying a plaster/sterile bandage. If the wound is large or relatively deep, contact A&E (to check whether stitches are necessary).

BURNS

- Cool immediately and continuously in cold water for at least 20 mins,
  and continue during transport to the doctor.

ELECTRIC SHOCK

- Strong blow to the chest, if the heart has stopped. If necessary, immediately commence heart massage and artificial respiration (mouth-to-mouth resuscitation).

FAINTING

- Ensure the airways are free, place the person in a comfortable position (stable side position), loosen any tight clothes, and check the pulse and breathing. As necessary: Cardiopulmonary resuscitation with heart massage and artificial respiration (mouth-to-mouth resuscitation).

SHOCK

- Try to calm the injured person. The injured person should preferably lie or sit comfortably with their feet above the level of their head. Make sure they have fresh air and are comfortably warm.

ACCIDENTS INVOLVING BIOLOGICAL MATERIALS

Spillage of cultures or other biological material.
Spills must be disinfected immediately. Using gloves, remove the spillage using paper wetted with 70% alcohol. Wet the dried surface with 70% alcohol and leave to stand for a few minutes. Wipe dry. Dispose of the paper and gloves in a hazard waste box.

ACCIDENTS WITH CHEMICALS (SOME SPECIFIC)

In general, refer to the safety data sheets in the Substances and Chemicals Register ECOonline. See the dedicated section on Safety datasheets and the Substances and Chemicals Register under *The Laboratory: Safety and the Working Environment.*

BROMINE (Br_2) ON SKIN

- Rinse the skin with plenty of sodium thiosulphate solution ($Na_2S_2O_3$).
  Afterwards, rinse with 60% ethanol and polyethylene glycol (Or use pyrisept ointment with polyethylene glycol as the ointment base.)
  The dangerous bromine (Br_2) is reduced by the thiosulphate ($S_2O_3^{2-}$) to the relatively harmless bromide (Br^-).

ETHIDIUM BROMIDE

This chemical (crystals and solutions) is a potent mutagen

- If inhaled or swallowed, seek medical advice.
- If in contact with the eyes or skin, wash for many minutes with water.
- In the event of spillage, wash with 1-2% Deconex.

PHENOL (C_6H_5OH) ON SKIN

- Rinse with water. Next, wash the skin repeatedly with glycerol or aqueous polyethylene glycol (PEG). Apply pyrisept ointment liberally to the skin.

MERCURY (Hg) SPILLAGE (ON WORKBENCHES/FLOORS)

- Draw up the metallic mercury using an eye dropper into a container.
  Spread sulphur powder (S) over the contaminated area (Hg + S = HgS). Leave for a short while before collecting everything together in a container. (Mercury absorbent can be used instead of sulphur (S)).
  The container is to be disposed of as chemical waste (Heavy metals, mercury).

ACCIDENTS WHEN WORKING WITH RADIOACTIVE SUBSTANCES

All employees who work with radioactive substances in the department must complete “Kurs i strålevern og radioaktivitet” [Course in radiation prevention and radioactivity) (Department of Chemistry, UiO) before start of the work. Other than this, there is daily instruction in work routines in the laboratory through personal instruction (e.g. higher degree students).

PRACTICAL MEASURES IN THE EVENT OF AN ACCIDENT

In the event of an accident with radioactive substances, measures must be initiated promptly to limit spread and unnecessary exposure. The contaminated area must be cordoned off and access must be blocked. Protective gear must be used (gloves, coats, disposable shoecovers, and measuring devices). If equipment and/or workplace have been contaminated, the decontamination procedure must be performed. Washing must be carried out for example with 5% Deconex, preferably several times. If it is not possible to remove the contamination in this way, the HSE department must be notified. A contaminated surface that cannot be decontaminated must be removed, or screened if necessary. Contaminated clothes must be changed and

washed (separately). Contaminated skin must be washed immediately with soap and water. All accidents with radioactive substances must be notified immediately to the responsible persons in the department (Safety delegate, Radiation Safety Coordinator and Head of Department).

FIRE INSTRUCTIONS

General rules in case of fire

If you discover fire or you hear a firealarm you are obliged to leave the building!

Depending on circumstances you may:

Alert:	Everybody in the area should be alerted. Use fire alarms when provided. Call 110!
Assist:	Help people who need assistance to the nearest safe place.
Extinguish:	Use the extinguishing equipment at hand. Do not leave the fire as the fire may flare up again.
Control damage:	On leaving the building or the place of fire, close doors and windows, but do not lock.
Guide:	Explain the incident to the area leader or other person responsible.

Fire alarm 110

Police 112

Ambulance 113

Security and alarm centre 22 85 66 66

University of Oslo, Technical department. September 2001

Meeting place: Between the School of Pharmacy building (BL 25) and Helga Engs building (BL20)

FIRE INSTRUCTIONS FOR USERS

The University of Oslo

Fire Instructions for Users

All users of the University buildings have a responsibility to:

- Conduct their activities in such a way that fire does not easily breakout
  To reduce the fire hazard it is forbidden to use candles and other forms of open flames in all University buildings, with the exception of controlled work in laboratories, churches, and on staffed catering units where the restaurant has a license to sell alcohol.
- Familiarise themselves with the fire safety measures in the building. Take particular note of the location of fire exits, fire extinguishing equipment, and fire alarms.
- Not damage the fire safety measures that have been implemented. This applies in particular to fire exits, fire alarm installations, emergency lighting, fire extinguishing equipment, fire walls, and fire doors.
- Report anything that is faulty or missing to the person responsible for that section/floor.
- Report all damage/accidents and near-accidents that have, or could have, led to fire, or outbreak of fire. This must be reported on the standard form on the web pages of the Section for HSE.

All users have a duty to familiarise themselves with the fire safety measures in the building. This applies in particular to the location of fire exits, fire extinguishing equipment, and fire alarms.

In the event of a fire alarm:

- Follow the general fire instructions
- **Leave the building through the nearest fire exit and, once outside, <u>do not stand</u> by the entrance!!**

I have read and understood my instruction as a user of the buildings at the University of Oslo (UiO).

Building/Section: _____

_____ _____

Date User

FIRE INSTRUCTIONS FOR FIRE SAFETY SECTION LEADERS

THE UNIVERSITY OF OSLO

Fire instructions for floor and/or section leaders

Floor and/or section leaders are responsible for:

- Knowing the general fire instructions, the instructions for abnormal and varying risk, and local fire instructions, if applicable.
- Familiarising employees and students with fixed workplaces on their floor/section with the general fire instructions and the user instructions. In addition, all escape routes and technical fire measures must be demonstrated.
  When this information has been received, this document must be signed by the recipient and then sent to the Head of Unit.
- Providing new employees with the information above within the first week of employment. This must be documented in the same way as above. This also applies to temporary employees, temps, and consultants who it is anticipated will work on that floor for more than 1 week.
- Routinely checking the emergency escape routes and other technical fire measures in their area of responsibility. If any faults or deficits are found, these must be reported to the Fire Safety Officer with a copy for the Head of Department. Forms for these reports can be found in the fire safety documentation and on the Technical department's webpage. Electronic mail may also be used.
- Knowing the content of the fire safety documentation and where it is located.
- Informing the Head of Department of people with disabilities on their floor/in their department. Cooperating with the Head of Department, Fire Safety Officer and Safety Delegate to ensure the satisfactory safety of people with disabilities in the event of a fire.
- Familiarising at least one deputy with these instructions.

In the event of a fire alarm:

- Put on the fire safety vest and encourage people on your floor/in your department to leave the building.
- **Leave the building and ensure that people do not stand right outside the entrance!!**
- Notify the person in charge at the Fire Services of any people who have not left the building and where they may be found.
- Inform users on your floor/in your department of the cause of the fire alarm.

These tasks may be delegated, but the overall responsibility remains with the floor/department leader.

I have read and understand the instructions for floor/department leader

Building/floor/unit: _____

_____ _____

Date Floor and/or department leader

COMMON ROUTINES

ACTION PLAN IN THE EVENT OF SERIOUS ACCIDENTS, INCLUDING MANDATORY NOTIFICATION TO THE NORWEGIAN LABOUR INSPECTION AUTHORITY

PURPOSE

To ensure that necessary first-aid is given, and to ensure that the correct units are notified in the event of serous personal injury (including notification to the Norwegian Labour Inspection Authority). To prevent new accidents and injury.

RESPONSIBILITY

The immediate line manager at the site of the accident/incident is responsible for following up the accident/incident both with regard to the injured and with regard to notification on the appropriate form.

DEFINITION

- Serious accident: An undesired incident that results in serious injury to people, the environment, or materials.
- Accident: An undesired incident that results in minor injury to people, the environment, or materials.
- Near-accident: An undesired incident that in slightly different circumstances would have resulted in injury to people, the environment, or materials.

PROCEDURE

ACTION PLAN IN THE EVENT OF SERIOUS ACCIDENTS/INJURY

1. Give first aid. UiO Health Services (Helsetjenesten) (tel. 22 85 31 74)

2. Notify the Security Centre at UiO (tel: 22 85 66 66) who will forward emergency calls as appropriate to:
   - Fire Services (tel. 110), Police (tel. 112), Oslo A&E services (tel. 113)
   - UiO Health Services 22 85 31 74
   - Ullevål University Hospital: A&E Reception (tel. 22 11 73 50)
   - Ullevål University Hospital: Department of Ophthalmology (tel. 22 11 85 45/22 11 85 47) The Norwegian Poison Information Centre (tel. 22 59 13 00)
   - Taxi – emergency help (tel. 22 38 80 50)

3. Immediately notify the accident by phone (Head of Department or their deputy) to:
   - The Safety Delegate
   - The Director, School of Pharmacy (tel. 22 85 6586) (who forwards the information to the Faculty Administration)
   - Section for HSE at UiO (tel. 22 85 88 95)
   - The Norwegian Labour Inspection Authority 2nd District (tel. 23 08 05 05, fax: 22 17 78 10)

4. Secure the site of the accident, if possible, until the police/Norwegian Labour Inspection Authority arrives.

POST-INCIDENT ACTIONS IN THE EVENT OF ACCIDENTS /NEAR-ACCIDENTS

5. All accidents/near-accidents must be recorded on internal accident notification forms and sent to the Director, School of Pharmacy with a copy to the HSE Section at UiO (no later than 3 days after the accident).
   (The Director, School of Pharmacy must archive a copy in the injured person's employee folder)
   The internal accident notification form minus personal details is sent to the Head Safety Delegate at UiO.

6. In the event of serious accidents or as requested, supplementary information on the course of the incident must also be sent to the Director, School of Pharmacy, the HSE Section at UiO, and the Norwegian Labour Inspection Authority 2nd District.

7. The Director, School of Pharmacy reports an injury to the injured person's Social Security Office (RTV Form IA 13-07.05), when indicated by the injury and always when:
   - the injured person has received medical treatment
   - the injury results in incapacity
   - the injured person wishes this
   - the Social Security Office requests this
   The notification must be sent as soon as possible and no later than 3 days after the incident. Remember to report all injuries. Seemingly minor injuries can develop into serious problems with major economic consequences.

8. The injured person must contact their local Social Security Office/Pension Fund for reimbursements. Reimbursement is conditional on notification of the injury to the appropriate body.

9. Consent must be obtained from the injured person to enable use of the personal details from the accident in internal accident prevention efforts (The Working Environment Act §20). If consent is not given, the form must be stored confidentially in the injured person's company medical records.

REGISTERING ACCIDENTS AND NEAR-ACCIDENTS

PURPOSE

To secure the rights of the injured person(s) when an undesired incident has occurred.
To prevent new accidents and injury.

RESPONSIBILITY

The immediate line manager at the site of the accident/incident is responsible for following up the accident/incident both with regard to the injured and with regard to notification on the appropriate form.

DEFINITION OF INJURY, ACCIDENT, AND NEAR-ACCIDENT

The form for "Internal Notification of Injury" must be used in the following injuries/accidents and near-accidents:

- Accidents that result in absence or medical treatment
- All injuries or accidents that require first-aid
- All material damage and/or environmental damage (fire, chemical spill, etc.)
- All undesired incidents/dangerous conditions that could have resulted in harm to persons and/or materials and the environment (near-accidents)
- All near-accidents

PROCEDURE

1. All personal injury, accidents and near-accidents are notified on the form for "Internal Notification of Injury". The immediate superior at the incident site is responsible for completing and distributing the form. One (1) form must be used per person.

2. A copy of the completed form must be sent to the Head of Department for the involved department, the Director, School of Pharmacy, and the HSE Section (PO 1071 Blindern).

3. Reports are processed continuously at the School's L-AMU meetings, and in the department in which the injury occurred.

4. The School's L-AMU- meetings undertake a six-month audit of all notified injuries/accidents and near accidents, and in particular assess whether preventive measures are to be instigated.

5. If the scope of the incident is greater than that outlined above, the routines for mandatory notification to the Norwegian Labour Authorities of accidents in the workplace with serious personal injury must be followed.

6. For all personal injury requiring medical assistance, sick leave and for injuries that could result in future incapacity even if medical assistance is not called, the immediate line manager must ensure that "RTV Form 13-07.05" is sent to the Norwegian Labour and Welfare Administration. The form can be obtained from the Social Security Office or the HSE Section, PO. 1071 Blindern.

7. The Norwegian Labour and Welfare Administration's "RTV Form 13-07.05" must also be sent to the State Pension Fund if the employee is a member there, in accordance with the guidelines in section 5.

8. Consent must be obtained from the injured person to enable use of the personal details from the accident in internal accident prevention efforts (The Working Environment Act §20). If consent is not given, the form must be stored confidentially in the injured person's company medical records.

THE LABORATORY: SAFETY AND THE WORKING ENVIRONMENT

ROUTINES FOR HANDLING AND STORING CHEMICALS AT THE SCHOOL OF PHARMACY, UNIVERSITY OF OSLO

Version: 17.04.2009 P. Rongved

PURPOSE

The routines describe the general guidelines for handling and storing chemicals including in-house manufactured mixtures/solutions. Storage in this instance is the storage of chemicals that are not for immediate use. Correct storage of chemicals is necessary in order to reduce the potential for chemical impact on the environment, and to reduce the extent of harm if an accident should occur. Handling in this instance is the handling of chemicals during use in relation to HSE, as well as routines for handling chemicals that are to be destroyed.

1 DEFINITIONS

Term	Explanation
Incompatible chemicals	Chemicals that react with each other and form: Poisonous or explosive compounds, gasses, or heat. For example: ox./red. agents; acids/bases and combinations of these; cyanide salts together with acids.
Secondary containment	Secondary containment: Containers/vessels that capture spills if the primary container is broken. The container must be made from resistant materials.
Flashpoint	The temperature at which a fluid in a given flashpoint device at a certain air pressure produces so much vapour that, at ignition, a flame occurs above the surface of the liquid.
Fire cell	Entire building or sections of a building in which a fire can freely develop without spreading to other buildings or other parts of the building within a given time.
Class A liquid	Flashpoint < 23°C
Class B liquid	Flashpoint between 23°C - 55°C
Class C liquid	Flashpoint above 55°C

2 RESPONSIBILITY

- Head of Department is responsible for ensuring that the routines are known, implemented, and complied with.
- Each department must have a Technical member of staff who is responsible for handling chemicals and maintaining a chemicals register. Employees and managers who use the chemicals are obliged to follow the routines.

3 PROCEDURES FOR USE AND STORAGE OF CHEMICALS

3.1 GENERAL

All chemicals must have a dedicated storage location, separate from the workplace, when not in use. The storage location must be tidy and clearly set out. The storage location and chemical containers must be marked with the correct hazard symbol. Detailed information on the requirements for the individual chemical's storage conditions and labelling can be found in the chemical HSE datasheet, which must be registered in the School's database (currently ECOonline). Chemicals removed from the chemical stores that are not in use daily must be returned to their dedicated storage location.

Chemicals that are no longer used and chemicals whose shelf-life has expired must be removed preferentially from the storage location and handed in for destruction (see section 5). Nevertheless, these chemicals can continue to be used for technical tests after assessment for safety and quality by chemists with the appropriate competence.

3.2 GENERAL REQUIREMENTS FOR STORAGE ROOMS

Storage rooms must have floors, walls and ceilings made from resistant materials. The room must be dry and well-ventilated. Emergency showers, eye douches, adsorption agents, and fire-extinguishing devices of the correct type must be located in the immediate vicinity of the storage room. The storage room must be inspected regularly. The storage room must be marked in accordance with the regulations on safety signs and signals in the workplace.

3.3 GENERAL SAFETY REGULATIONS

In general, chemicals must be stored on the "first in - first out" principle to avoid exceeding their expiry date. If the chemicals do not have a date stamp on the packaging, the date of reception must ALWAYS be noted on the chemical before placing in stores.

3.4 INCOMPATIBLE CHEMICALS

Incompatible chemicals must be stored apart in a dedicated storage facility. A dedicated storage facility is an arrangement that prevents contact between the chemicals in the event of leakage. Small amounts of incompatible chemicals (<100 ml) may be stored in the same facility if a risk assessment has been conducted and suitable secondary containment is used.

3.5 FLAMMABLE SUBSTANCES, LIQUIDS, AND GASSES

Flammable substances, liquids, and gasses must be stored in fireproof cabinets or rooms. The cabinet or room must be marked with a fire hazard sign. The container for storing flammable goods must be in a secure location. Accessibility must be facilitated in connection with fire-fighting, status checks, and maintenance. Flammable gasses must not be stored in attics or basements due to the seasonal variation of the outside temperature combined with a lack of inside temperature control.

3.6 FIREPROOF CABINETS/FRIDGES IN LABORATORIES

In laboratories, flammable substances must be stored in dedicated fireproof cabinets. The cabinets must have a fire-resistance of at least 20 minutes. The cabinets must be ventilated, and when scrapping old cabinets these must be replaced by ventilated cabinets. The doors must always be closed when not in use.

Fridges that are used to store flammable substances must be specially designed and constructed for this purpose.

Fireproof cabinets and fridges which are used to store flammable substances must be marked with the correct hazard signs (see Appendix in the HSE manual).

A laboratory with a closed door constitutes a fire cell. Up to 40 litres of Class A liquids may be stored here.

3.7 SUBSTANCES WITH SEVERAL HAZARD CLASSES

Some chemicals come under several hazard classes. In such cases, the hazard classes are ranked as follows, with the greatest hazard listed first:

1. Flammable substance
2. Oxidising substance
3. Acids
4. Bases
5. Miscellaneous

Chemicals that are both flammable and oxidising must, for example, always be stored in a fireproof cabinet.

3.8 DRY CHEMICALS, LIQUIDS

When not in use, chemicals must be stored in the designated storage location. Chemicals that are stored in the laboratories must be stored on designated shelves or in designated cupboards. Impermeable packaging must be used. Liquids/oils must be stored in ventilated cupboards. Chemicals must not be stored on workbenches or in fume cupboards.

3.9 CHEMICALS STORED IN A FRIDGE/FREEZER

Fridges are primarily to be used for chemicals that are temperature-sensitive. If the fridge does not have ventilation, the chemicals must be stored in suitable containers/jars. Packaging must, as far as possible, be impermeable. Round bottomed flasks and Erlenmeyer flasks must if necessary only be used for a limited period (days) and must be closed. Chemicals with a limited shelf-life must be destroyed at expiration of the shelf-life, not stored. At least once very six months, fridges and cold rooms must be emptied of chemicals that are not going to be used in the near future.

3.10 IN-HOUSE MANUFACTURED CHEMICALS

A suitable closed container must be used to store in-house manufactured chemicals. The container must be labelled with the name of the substance, its structure, register no./production no., date, and the identity of the person responsible.

3.11 ETHANOL

Ethanol must be stored in a locked cupboard. Stock solutions in small amounts can be stored in the laboratories.

3.12 ACIDS AND BASES

Acids and bases must be stored in dedicated cupboards that are marked with the correct hazard symbol. Acids and bases must always be stored separately, and be placed in suitable secondary containment. Stock solutions in small amounts can be stored in the laboratories

3.13 CORROSIVE SUBSTANCES

Corrosive substances must always be stored as low as possible, and in all circumstances below head height. This is to reduce the risk of personal injury in the event the container should tip over.

3.14 GASSES

Gas cylinders must always be stored upright, and must be secured with a chain or similar to avoid tipping of the cylinder. The chain must be affixed above the cylinder’s centre of gravity. Rooms in which pressurised gas is stored must be marked with the correct hazard symbol. This is to avoid the risk of personal injury, in particular, in the event of a fire, to fire-fighting personnel.

4 TRAINING

The Head of Department must ensure that all employees are familiar with the requirements and regulations for storing chemicals, and that necessary instruction is given.

5 DISPOSAL OF CHEMICAL WASTE

5.1 GENERAL

One of the engineers in the subject group Medicinal Chemistry, Department of Pharmaceutical Chemistry, is responsible for the handling of chemicals, and implementation of the routines described in Chapter 5.

Chemical waste that can be destroyed simply in an environmentally and responsible way in the unit, must not be handed in but is to be destroyed locally. Destruction in the laboratory: Use the procedures described in "Kjemiske stoffer [Chemical substances]", Vita data A/S, 1991, or confer with the advisor or engineer in the medicinal chemistry group.

Other hazardous chemical waste (that cannot be included under "organic solvent waste" or "pharmaceutical waste") must be delivered to the chemicals waste store in the pharmacy building, room 009, and sorted into the allocated boxes. It is important that chemicals containing heavy metals and reactive chemicals are put into the correct box. The boxes must be labelled in accordance with the substance categories in the table in section 5.7.

Admission to room 009 is permitted only in company with the engineer in the medicinal chemistry group. Appointments with the engineer must be arranged in each case.

Every six months, chemical waste will be declared by the person responsible for chemicals disposal and sent to approved special waste collection centres (see section 5.7: "Other chemical remnants – delivery to waste collection centres").

5.2 ORGANIC SOLVENTS WASTE

Organic solvents waste that contains less than 10% water must be emptied into the appropriate remnants containers for organic solvents waste. (Low water content facilitates incineration).

Rests of organic solvents that contains more than 10 % water must be emptied along with halogenated solvents into the right tank in the Workshop yard at the Department of Chemistry.

HALOGENATED SOLVENTS

All halogenated solvents must be emptied into dedicated remnants containers found in each laboratory. These containers must be labelled "Halogenated organic solvent remnants". Examples of such substances are carbon tetrachloride, chloroform, methylene chloride, trichlorethylene, chlorbenzene, etc., as well as nitrobenzene.

NON-HALOGENATED SOLVENTS

Remnants of non-halogenated organic solvents must be emptied into the remnants containers located in each laboratory. These containers must be labelled "Non-halogenated organic solvent remnants".

VOLATILE ORGANIC SOLVENT REMNANTS (BENZENE, ETHER, ETC.)

Small quantities can be evaporated off in the fume cupboard without application of heat, or outdoors in an isolated area.

When the organic solvent waste remnant containers are full, they must be emptied into the collection tanks in the Workshop yard at the Department of Chemistry (see picture). Cans/bottles with non-halogenated solvent remnants are emptied into the left tank. Cans/bottles with halogenated solvent remnants are emptied into the right tank. Remember to note what you have emptied in the books in the cupboard by the tanks. Use protective eye goggles (also to be found in the cupboard). The key to the tanks can be obtained from Central Stores or the engineer in the Medicinal Chemistry group.

If the collection tank for the non-halogenated waste is full, the waste can be disposed of together with the halogenated waste. Halogenated waste must NEVER be disposed of into the collection tank for non-halogenated waste.

The shed with the waste tanks

5.3 PHARMACEUTICAL WASTE

Pharmaceuticals in small quantities may be handed into the chemicals waste stores in the Pharmacy building, Room 009 (the key can be obtained from the office in Reception). Larger quantities must be packed in hazard waste boxes and placed in Room 009 in the Pharmacy building.

5.4 COMBUSTIBLE PAPER WASTE

Paper towels and similar that could self-ignite must be rendered safe before discarding. The paper must be placed in a fume cupboard to evaporate off. Waste containers for flammable waste can be provided (red metal containers that the users empty).

5.5 GLASS WASTE

Glass waste is collected together and brought to special containers in the Workshop yard. NB! Chemical bottles must be completely empty and cleaned before disposal. NB! Very important: Only clean glass is to be put in this container. No ceramics, plastics, metals, paper or fluorescent light bulbs.

5.6 SYRINGE NEEDLES CONTAINING SOLVENT REMNANTS, ETC.

These are placed in special dispenser boxes (can be obtained from the Central Stores at the Faculty of Chemistry) or empty chemical jars. If the syringe needles do not contain hazardous materials, the boxes can be screwed tightly and disposed of with normal waste. Otherwise they are disposed of in the Hazard waste boxes that are then taken to the Pharmacy building, Room 009. They are collected from here by a company that takes them directly to incineration.

5.7 OTHER CHEMICAL REMNANTS – DELIVERY TO WASTE COLLECTION CENTRES

5.7.1 NB! Explosive, self-igniting, infection-hazard, radioactive substances, or organic peroxides are not accepted. This type of waste must be handled individually and separately.

5.7.2 Packing and sorting

Sorting must first be undertaken by the person responsible for the Chemicals routine at the School of Pharmacy as stipulated on the NORSAS forms. The form and guidelines must be ordered from NORSAS AS, see www.norsas.no. The following are the most-used substance categories with corresponding EAL codes at the School of Pharmacy:

Substance no.	**Waste category**	**EAL code**
7041	Organic solvents, halogenated	140602
7042	Organic solvents, non-halogenated	140603
7043	Paints, adhesives, varnishes - solvent-based	080111
7053	Paints, adhesives, varnishes - water-based	080111
7055	Pressurised cans	160504
7081	Mercury-containing waste	060404
7083	Cadmium-containing waste	060405
7091	Inorganic salts containing heavy metals	060313
7092	Lead accumulators	160601
7122	Highly reactive substances	160506
7123	Organic peroxides	160508
7131	Acids, inorganic	200114
7132	Bases, inorganic	200115
7133	Cleaning agents	200129
7134	Acidic organic waste	160508
7151	Organic waste, halogenated	160508
7152	Organic waste, non-halogenated	160508
7220	Photographic chemicals	200117
7250	Asbestos insulation	170601
7091	Inorganic chemical remnants	160507
7030	Oil emulsions	120109

PACKING:

The chemicals are packed in boxes. The box must first be equipped with a solid plastic bag. Each box must only contain chemicals that have the same substance no. The boxes/containers must be tightly closed and packed vertically. Boxes with plastic bags (Waste containers for hazardous waste), can be obtained from VWR (low type with bag 50 L, permitted weight 12.5 kg, pack of 10, article no.: 129-0042). The Technical Department pays for these. Several layers of small bottles can be packed in each box, but a powder must also be added that not only neutralises but also absorbs water and knocks. Perlite can be used which can be bought by the sack from Renor. First place a little Perlite in the base of the box, then spread a little between each layer of small bottles, and finally a little on the top before closing. NB! Do not mix chemicals that can react with each other and develop poisonous gasses. The worst case scenario is acids and cyanides that could generate hydrocyanic acid if the contents of the box break.

DECLARATION:

The form "Declaration of special waste" can be bought from NORSAS.
UiO's organisation number is 971035854.

Invoicing address: Universitetet i Oslo, Stedkode 32 20 12, Sentralt fakturamottak, pb 1074 Blindern, 0316 Oslo [University of Oslo, Site code 32 20 12, Central Invoicing Office, PO 1074 Blindern, N-0316 Oslo]

The number of kilos/litres is filled in either by the person responsible for Chemical Disposal or the transport company that collects the waste.

Number of containers: The number with the same substance no. that the Declaration form applies to. Mark the boxes with the Declaration number to be found on the top right of the form.

Description: Example: "Remnants of strong acids from the Chemistry laboratory" or "Mercury thermometers and other mercury remnants from laboratories" or similar descriptions.

Transport classification:
Tick the ADR class that applies for road transport.
ADR classes:

Class 1:	Explosive substances and articles
Class 2:	Gasses, compressed, liquefied, or dissolved under pressure
Class 3:	Flammable liquids
Class 4.1:	Flammable solids
Class 4.2:	Substances liable to spontaneous combustion
Class 4.3:	Substances which in contact with water emit flammable gasses
Class 5.1:	Oxidising substances
Class 5.2:	Organic peroxides
Class 6.1:	Toxic substances
Class 6.2:	Infectious substances
Class 7:	Radioactive materials
Class 8:	Corrosive substances
Class 9:	Miscellaneous dangerous substances and articles

TRANSPORT TO WASTE COLLECTION STATION

Call Ragn Sells, tel. 08899, or mail to 08899@ragnsells.no.

6 REVIEW

This routine must be reviewed as required.

CORRECT USE OF FUME CUPBOARDS

PURPOSE

To establish general basic rules for all work in fume cupboards at the School of Pharmacy. The rules must contribute to high levels of safety in the laboratory. Everybody must comply with the same basic rules and have the same expectations with regard to how to work in and use fume cupboards so that accidents and injury are prevented.

RESPONSIBILITY

The immediate line manager in each laboratory is responsible for ensuring that the rules for working in fume cupboards are followed. The line manager is also responsible for pointing out and following up any breach of the rules.
Each person who works in one of the School's laboratories is responsible for familiarising themselves with the rules for working in fume cupboards and for complying with them.
The Head of Department/line manager is responsible for ensuring that any necessary protective gear is available.

PROCEDURE

STANDARD WORK ROUTINES FOR WORKING IN FUME CUPBOARDS

- Personal protective gear must be used as required.
- Ensure that the fume cupboard is cleared of unnecessary equipment, flasks, etc. before starting work. Flasks and equipment impair the laminar airflow in the cupboard and diminish the extracting efficacy.
- Check the safety height of the sash. Normally, this is 25-30 cm. When working, this height must not be exceeded. If however this height is exceeded, the volume of air from the cupboard must be increased above normal. Some cupboards have automatic regulation of the air volume (constant flow).
- Choose your working position (sitting or standing) based on the risk of liquid splash and the duration of the work. Never bend your head in the cupboard, but re-assess the work method or the test set-up.
- Position the work (volatile liquids, materials that release dust, etc.) as far as possible in the centre of the cupboard. Generally, suction is strongest here. Work using calm movements in the cupboard. This stops turbulence and movement of polluted air into the breathing zone.

TIDINESS AND CLEANLINESS IN FUME CUPBOARDS

- Tidy and clean after working. The fume cupboard must not be used for storage. Inflammable, corrosive, irritating liquids, chemicals, and similar must be put back in the chemicals cupboard with ventilation.

CONDUCT WHEN HANDLING CHEMICALS

- Do not expose others or yourself to unnecessary health hazards. Use the fume cupboards. Transport of chemicals between the chemicals cupboard and the fume cupboards must take place with minimum risk to yourself and others in the laboratory.
- At tests that involve the use of hazardous chemicals, a copy of the HSE datasheet must be easily accessible in the laboratory.
- At tests that involve the use of hazardous chemicals, the work procedure must be designed to take this into account, so that necessary technical checks of process equipment and safety equipment are conducted in advance. It must be ensured and documented that the equipment and materials are appropriate, and that necessary safety equipment is available and functioning.
- The quantity of chemicals in the fume cupboard must be limited to that necessary for the work in progress.

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment must be available in the laboratory and must be used if conditions dictate this: i.e. eye protection, gloves, and laboratory coat. Face protection is shared between the laboratories as required. Other personal protective equipment (e.g. breathing apparatus) can be obtained as required. Use a fume cupboard if the work requires this. Contact lenses can be worn if they are used in combination with eye protection.

FIRST AID EQUIPMENT

First aid equipment must be easily accessible in each laboratory.

1. An emergency shower must be installed just outside every laboratory.
2. Eye douches: Research laboratories: Minimum one per person.
   (Course laboratories: Minimum one per 5 persons)
3. First aid cupboard/box must as a minimum contain:
   Plasters, scissors, all-in-one packs, bandages, 1 bottle chlorhexidine.
4. Fire blankets: Minimum 1 fire blanket in each laboratory.

LABORATORY TESTS

Laboratory tests must undergo risk assessment and be recorded.

Risk assessment: A systematic assessment to find out which undesired events could occur, what could be done to prevent these, and what is necessary to minimise the impact if something should nevertheless happen.

TIDINESS

Everybody is responsible for keeping their laboratory tidy and for clearing up after themselves in other rooms. The laboratories must be kept clean and tidy at all times. Contact the person responsible for the room if necessary.

The laboratories must be locked (and windows closed), when they are vacated to prevent access by unauthorised persons.
Normal laboratory working hours are from 8:00 - 16:00.

The name of the person responsible for the room must be posted at the entrance to all special rooms. The person responsible for the room has a particular responsibility for following up the activities in the room and for ensuring that users tidy up after themselves. It is not their responsibility to tidy up after others.

Chemicals/equipment must not be lent out/removed from the place of use without the permission of the person responsible for the room or for the instruments. The person responsible for the room or for the instruments must be notified of any defective equipment.

Each laboratory must have the School's HSE Manual (relevant sections) and folder with HSE datasheets visible and easily accessible; chemicals cupboards with ventilation (as required) for storage of dangerous chemicals; and fume cupboards (as required) for working with these chemicals.

Breach of HSE regulations (the UiO HSE Manual; the Faculty of Mathematics and Natural Sciences HSE Manual; the School of Pharmacy HSE Manual; and the Working Environment Handbook for Students) must be notified to the person responsible for reporting/remedy.
All orders from the Safety Delegate must be complied with.

UNAUTHORISED PERSONS

Notify the Security Centre if unknown persons are discovered in the laboratory or on other premises to which they do not have access. From and including 01.10.2002, employees are permitted to restrain/request proof of identity.
NB! Minors are not permitted in the laboratories.

SAFETY DATASHEETS AND THE SUBSTANCES AND CHEMICALS REGISTER

Safety datasheets must be read prior to opening any chemicals container. Be aware that the contents of a new chemical container of a specific product can be more reactive than the contents of an old one.

The School of Pharmacy will via a person responsible for the Substances and Chemicals Register in each department, maintain the School's collection of electronic safety datasheets and localisation of the School's chemicals (ECOonline Substances and Chemicals Register). The user must inform the person responsible for the Substances and Chemicals Register of any changes in the chemicals stock.

The users/groups must maintain a separate or joint binder with material safety data sheets in hard copy on site. If the updated safety data sheets are missing in their own binder, a new version should be printed from the School's electronic Substances and Chemicals Register (ECOonline).

BIOLOGICAL MATERIALS AND CULTURES

When working with biological materials or cultures it is important to wash your hands frequently in order to avoid infection. Use hand cream as well. Solutions that contain live materials, virus, or plasmids must be autoclaved prior to disposing of the solution down the sink. Bottles and flasks with contents must be labelled. The label must correspond to the content. Remove the label before the equipment is sent for washing. Do not use other people's pipettes without asking!

CHEMICALS

Chemicals must be treated with caution because most of them are poisonous and several of them react with air, water, alcohols, etc. Read the safety datasheet prior to opening the chemical container and prior to use. (The date for receipt of the chemical container from the supplier is to be noted, if not already noted, on the container).
Substantial changes in the chemical stocks must be notified to the person responsible for the Substances and Chemicals Register.

Dangerous chemicals that are not in use must be stored in the chemicals cupboard with ventilation. This also applies to remnant cans containing organic solvent remnants. The only exception is concentrated hydrochloric acid (HCl) which can be placed in the fume cupboard to prevent corrosion of the chemicals cupboards.

All chemical containers must be marked and a list of codes (that explain the contents) must be easily accessible.

Chemical spills must be removed immediately. Remnant cans must not be so full that they overflow. The scales must be clean.

Laboratory chemicals must not be stored or used in premises designed for other use (e.g. offices). Fume cupboards must be used when working with dangerous chemicals.

See in addition *Routines for handling and storing chemicals at the School of Pharmacy [Rutine for håndtering og lagring av kjemikalier ved Farmasøytisk institutt]* under Common routines.

PHARMACEUTICALS

Pharmaceuticals and medicine formulations are handled in accordance with the safety datasheets for the active ingredients. Narcotic substances (Group A) must be stored in a safe.

GAS CYLINDERS

Gas cylinders must be securely affixed so that they cannot tip over. The outside of the laboratory doors must be marked with a warning sign for gas cylinders. Transport of gas cylinders must only take place after the gas regulator has been removed from the cylinder. The gas cylinder is highly pressurised (normal max. pressure is about 200 bar), which is enough to send the cylinder through the wall like a rocket if the gas cylinder falls and the gas regulator is knocked off.

GAS REGULATOR

NB! When mounting the gas regulator, the threads must not be lubricated with grease, as oxygen in particular can ignite the grease! Be sure that all valves are switched off/closed prior to opening the cylinder.

Valves: Gas cylinder main valve = 1, Gas regulator main valve = 2.
Closing the gas cylinder: Turn (1) clockwise (inwards), turn (2) counter-clockwise (outwards).
Opening the gas cylinder: Turn (1) counter-clockwise (outwards), turn (2) clockwise (inwards).

ACETYLENE

If “strange” noises can be heard from a gas cylinder containing acetylene, a chain reaction could be occurring inside the cylinder that can increase the pressure such that the cylinder bursts. Acetylene is an extremely flammable gas.
Evacuate the building. Contact the Fire services.

INSTRUMENTS AND HAZARDS

DEWAR VESSELS

Danger of implosion due to internal vacuum. Cold solutions must not be poured on the edge of the vessel!

HPLC (HIGH PRESSURE LIQUID CHROMATOGRAPHY)

Overpressure can burst tubes resulting in solvent/sample splash.

FRIDGES (STANDARD)

Must not be used to store flammable chemicals due to the fact that sparks from the thermostat and light bulb present a fire and explosion hazard.

COMPRESSOR AND FLUID BED APPARATUS

Take care to de-pressurise tubes before dismantling.

LABORATORY DISHWASHERS

Keep the area around the machine tidy. Remove clean glass equipment when the machine has finished. Examine and clean base and base filter. Broken glass must be disposed of in the waste glass container.

NMR

NMR instruments are surrounded by a magnetic field which can damage cards with magnetic strips (e.g. mini bank cards, key cards, borrowing cards), laptops (strips data from the hard disc), clocks, electronic equipment. People with pacemakers and those who have implants/implanted parts of magnetic metal in the body are not allowed to enter the NMR lab. This is for their own safety since the pacemaker may stop functioning.

ROTAVAPOR

Read the entire user instructions prior to using the rotavapor.
Follow the safety instructions in the SOP.
The rotavapor must only be used by employees and master students who either through training or own professional experience have a sound understanding of the dangers that can arise at use of the equipment. Those who have not received training must not use the rotavapor by themselves.

Round bottomed flasks with cracks/hairline cracks must not be used as they can implode (explode inwards) due to the vacuum. Rotavapors should preferably be connected to membrane pumps with cold traps and exhaust to the fume cupboard, and should not be connected to a water jet pump where much of the solvents that evaporate will disappear down the drain.

Personal protective equipment such as eye protection and lab coats must always be used when working with a rotavapor.
Hard copies of the user instructions and the SOP (standard operating procedure) for the type of rotavapor must always be available next to the equipment.
Refer to the School of Pharmacy common area N:\HMS for the following user instructions for use of the rotavapor: Büchi Rotavapor Operation Manual.pdf.
This contains a good description of correct use, hazards, and general safety at use of a rotavapor.

ULTRASOUND BATH

Shakes molecules loose. Do not put body parts into the vessel.

UV LAMPS (HAND-HELD LAMPS WITH AND WITHOUT STAND AND IN INSTRUMENTS)

Short wavelength light (254nm) and long wavelength light (365/366nm). UV light must never be directed at people. The wavelength and energy are inversely proportional. This means that the shorter the wavelength the greater the energy and the greater the danger.

HOT AIR PISTOL (ELECTRIC)

High temperature/strong heat. Exercise caution when using. Turn off when not in use. Hot air pistols can cleave products, ignite solvents, and cause fires and burns.

SCALES

Must be kept clean to avoid exposure to chemicals or biological materials.

TOXIC SUBSTANCES AND HAZARDS

All users are responsible for checking the safety datasheets prior to using the chemical/substance. See the School's Substances and Chemicals Register that describes the hazards and preventive measures: www.ecoonline.no

DECONTAMINATION OF BIOLOGICAL WASTE AND EQUIPMENT

MAIN WASTE GROUPS

A. Disposable equipment such as pipettes, pipette tips, Eppendorf tubes, syringes and used microscope slides.

B. Solid biological waste, e.g. used agar dishes and cell cultivation equipment.

C. Suspensions of cells, bacteria or virus and the equipment these have been in contact with, e.g. cultivation flasks, glass pipettes, test tubes and centrifuge tubes with lids.

DISPOSAL OF WASTE - TYPES A AND B

Such waste is to be placed in specially marked cartons for hazardous waste.
The cartoons must be lined with correspondingly marked waterproof yellow/black plastic sacks.
NB! Do not overfill the cartons as they must be closed without compressing the contents.

When the boxes are full, they are to be brought down to the waste disposal room next to the lift in the 2nd lower floor. Ragn Sells will take them from here to be incinerated.

DISPOSAL OF WASTE - TYPE C

There are two ways of treating the solution before it is disposed of down the sink.

Hazard class I:

1. **Autoclave**
2. **Chemical destruction** Addition of sodium hydroxide pearls, leave for 30 mins.

Example

MAXI PREP.

Culture remnants:	autoclaved
Supernatant:	Tipped back into the culture flask and autoclaved
Centrifuge tubes:	Inactivated with alcohol

MINI PREP. SMALL VOLUME IN SEALED TUBE IN HAZARDOUS WASTE

Hazard class II-2 and sporogenous bacteria:
Mandatory autoclaving

AUTOCLAVING PROCEDURES

Bacteria and cell cultures that are to be autoclaved are placed in the washroom in metal trays (marked area).

- Test tubes are placed in separate, suitable racks in empty autoclaving trays.
- Centrifuge tubes are filled with water and put in the same place.
- To avoid deformation, the centrifuge tubes must be open. Only centrifuge tubes in PP plastic can be autoclaved.
- Soft-agar tubes and corex tubes can be placed in autoclaving trays.

INACTIVATION PROCEDURES

METHODS FOR CHEMICAL DISINFECTION

1. SODIUM HYDROXIDE PEARLS
   - Inactivation of cultures, e.g.: **E. coli** 2 pearls/100ml

2. 5% CHLORAMINE
   - Disinfection at spills on benches.

3. VIRKON
   - Disinfection of equipment that cannot be autoclaved.
   - Removal of any spills on benches.

4. DECONEX
   - Primarily for difficult cleaning, but has disinfectant properties.

5. RECTIFIED ALCOHOL - 70%
   - Disinfection of equipment that cannot be autoclaved.
   - Removal of any spills on benches.

WASTE HANDLING

The user is responsible for ensuring that all waste they generate is destroyed and/or taken to the nearest collection point. See in addition *Routines for handling and storing chemicals at the School of Pharmacy [Rutine for håndtering og lagring av kjemikalier ved Farmasøytisk institutt]* under Common routines.

NORMAL WASTE/REMNANT WASTE

Only non-hazardous waste is to be handled without gloves: Plastic waste, food waste, dirty paper, and similar. Normal waste must not contain sharp objects, etc. that could injure cleaning staff.

Larger quantities of plastic and/or polystyrene are to be taken to the outside waste remnants containers by the user.
The remaining normal waste is collected by the cleaning staff.

PAPER WASTE

Paper and cardboard. Paper waste must be disposed of in the paper waste container by the user.

Containers for waste paper are located at:

- Pharmacy building platforms in the main stairs on each floor every Thursday at 09-13
- Physics building by the east lift on each floor on Fridays at 09-13
- Chemistry building by the east lift on each floor on Thursdays at 09-13
- ZEB building by the lift on the 3rd floor every Thursday at 09-13.

GLASS WASTE

Cleaned glass waste, broken glass and TLC plates.
(The following are not glass waste: Used silica, chemical remnants, plastic corks and fluorescent light bulbs. Used silica must be handed in as chemical waste, and contaminated glass must be packed in well and disposed of in the hazardous waste boxes.)

Glass waste must be taken by the user to the glass waste containers located at:

- Pharmacy building, Room 025 and the workshop yard in the Chemistry building.
- ZEB building. Glass waste must be put in glass waste boxes and placed in the “waste room” located by the side of the lift in ZEB 2U.

HAZARDOUS WASTE

Waste that cannot be disposed of safely together with consumer waste because it could cause serious pollution or risk of harm to people, animals, birds and fish. Chemical waste is described on page 20.

EE WASTE (ELECTRIC AND ELECTRONIC WASTE)

Waste such as white goods, cables and leads, computer equipment, office machines, measuring instruments, medical equipment, circuit cards, monitors, etc. must be disposed of in an EE waste container (must be ordered) after agreement with the local person responsible for equipment. The person responsible for IT must be notified when disposing of computer equipment.

HAZARDOUS WASTE

Biological waste, contaminated single-use items, and syringe needles must be packed in “hazardous waste boxes” (cardboard boxes with associated thick plastic bag). Sharp objects must be packed well before putting in the plastic bag. Syringe needles/scalpels can for example be packed in sealed plastic boxes. Infected materials of all types, small quantities of solvents in sealed containers, and gels with toxic substances can be disposed of. When the boxes are full, they must be properly closed, labelled, and taken to the Pharmacy building, Room 009.
In the ZEB building, the hazardous waste boxes are taken to the waste room next to the lift in ZEB 2U. The hazardous waste boxes will then be sent to be incinerated. NB! Organic solvents should not be put in the hazardous waste boxes as they can cause uncontrolled incineration.

WASTE ARISING FROM WORK WITH CELLS CLASSIFIED AS BSL-2 (BIOSAFETY LEVEL 2)

BSL-2 work in cell laboratories involves heightened safety routines compared to BSL-1(normal cell work). The most important requirements relate to signage of areas with restricted access when work is ongoing, and at waste treatment (autoclaving).

BSL-2 applies to pathogens (e.g. virus) that are associated with disease in humans. Preventive or therapeutic measures are often available.

Work routines (standard microbiological practice) for BSL-2:

Access to the laboratory is restricted when work with virus/virus-infect cells is ongoing. The door into the laboratory and the LAF bench (biosafety cabinet) must be marked with the BSL-2 sign, the name of the study, and the duration of the study.

Personnel must have received training in working with viruses prior to granting authorisation (a contract is drawn up that is signed, contact the person responsible).

Work in the cell lab is performed in an LAF bench that is approved for such work.

Liquid waste such as medium, solutions containing virus, etc. is disposed of into flasks containing **Virkon solution** that are situated in the LAF bench. For suction, the Virkon solution is added to the collection chamber; liquid waste is autoclaved and can then be disposed of down the sink.

Pipettes, pipette tips, etc. are placed in a dedicated waste bucket (see below). Pipettes must be rinsed in Virkon solution before they are put in the waste bucket.

Mark incubators with the virus sign during incubation.

Work with the cells in accordance with the BSL-2 standard until they have been lysed with sodium hydroxide or other (SDS solution, chloroform-methanol). Frozen cells in water should be treated as BSL-2.

Disinfection (decontamination):

Virus waste is disinfected with Virkon solution. Follow the instructions for use (www.puls-norge.no).

Suction and tubes must be rinsed with Virkon solution and then with 70% ethanol.

The LAF bench must be first washed with 2% SDS solution and then with 70% ethanol.

Leave the LAF bench under UV light overnight.

BSL-2 waste:

Waste (pipettes, cell flasks, medium) must be put in red bags marked hazardous waste. The bags are placed in stainless steel metal containers that must be used only for this type of waste.

All waste must be autoclaved.

After autoclaving, the waste can be disposed of as hazardous waste in yellow boxes. When the boxes are full, they must be closed properly, labelled, and taken to the Pharmacy building, Room 009.

RADIOACTIVE WASTE

All waste that has been in contact with radioactivity must be put in special waste boxes. There must be one box for C^{14} and one for H^{3} waste. **Non-radioactive (hazardous) waste must not be disposed of together with radioactive waste.** Waste from work with P^{32} must be disposed of in plexiglass containers.

For collection of the waste, contact the local (Arild Rustan for FI, Ewa Jaroszewicz for ZEB) or central Radiation Safety Coordinator (Elin Agathe Hult) at UiO.

ROUTINES AT THE ADMINISTRATION

HSE

Health, Safety and the Environment in the workplace

Version 2010

Universitety of Oslo
School of Pharmacy
Administration

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IN GENERAL

This is an overview of the routines in the Administration that are relevant as for the HSE work.You will find an overall presentation of the routines in the Administration at N:\Administrasjonens_Rutinehandbok_kopi.

RECEPTION

1.2 Admission card
1.3 Keys
1.9 Dealing with pure alcohol
1.13 Preparing the teaching rooms
1.15 Students' events
1.16 Fire instructions at events in the room BL25 054/055
1.20 Contact with the Technical Department

STAFF ISSUES

3.3 Registering new employees
3.4 Absence registration
3.6 Self-certified sick leave/doctor's certificate
3.7 The handling of issues involving staff and teaching problems
3.8 Quitting approvement
3.10 Reporting deaths

COURSES – EXAMINATION

6.7 Fire alarm during examination
6.11 Complaint about the censorship

CURRICULUM

7.4 Evaluation of subjects

ROUTINES AT THE DEPARTMENT OF PHARMACY

HSE

Health, Safety and the Environment in the workplace

Version 2010

Universitety of Oslo
School of Pharmacy
Department of Pharmacy

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INSTALLATIONS REGARDING HEALTH, SECURITY AND ENVIRONMENT

- Emergency shower in the womens lavatory in the ground floor (room 172)
- Eye washer
- Fire blanket
- First aid kits in room 010B – 029 – 167 – 176 – 224

BL25010B TABLET ROOM

Room responsible person: Helge Gundersen
Training responsible person: Helge Gundersen

ROOM ACTIVITIES

- Rooms containing larger pharmaceutical processing equipment.
- Tablets – pellets – spraydrying

RULES

- It is not allowed to use the instruments after normal working hours.
- Tablet producing machines should not be unattended while in use .
- Use a hood and a labcoat
- Face shield, protective goggles and ear protection. Rests from the production is classified as hazardous waste.
- Evacuate the air from the units under pressure before disconnection.

Risk	**Preventive measure**
High-power processing equipment,pressureized air, dust, noise	Coat, hood, ear protection, face shield

BL25011

Room responsible person: Helge Gundersen
Training responsible person: Helge Gundersen

ROOM ACTIVITIES

- Fluid.- bed for coating/granulating.

RULES

- Protective goggles
- Use ear protection, very noisy room.

Risk	**Preventive measure**
Pressureized air, dust, noise	Ear protection, face shield

BL25012

Room responsible person: Helge Gundersen
Training responsible person: Helge Gundersen

ROOM ACTIVITIES

- Temperature controlled cupboard and air compressor.

RULES

- Protective goggles
- Use ear protection, very noisy room.

Risk	**Preventive measure**
Pressureized air, dust, noise	Ear protection, face shield

BL25029

Room responsible person: Hoai T. N. Aas
Training responsible person: Hoai T. N. Aas

ROOM ACTIVITIES

- Laboratory for sterile production.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Autoclave	Hoai T. N. Aas	Hoai T. N. Aas	May be used during the naight

Risk	Preventive measure

BL25167 BL 25168

Room responsible person: Helge Gundersen
Training responsible person: Helge Gundersen

ROOM ACTIVITIES

- Laboratory
- Lab course preparation room

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Cenrtifuge IEC Centra MP4	Tove Larsen	Tove Larsen	
Freezedryer	Tove Larsen	Tove Larsen	Can be used during the night
Other instruments	Helge Gundersen	Helge Gundersen	

RULES

The water supply for the the lab washer and the water still must be turned out during the night.

Risk	Preventive measure
Strong acids	Protective goggles, work in a fume hood
Organic solvents	Store in a chemical locker, and work in a fume hood
Labwasher and water still	Turn out the water supply at the end of the day..

BL25176 STUDENTS' LAB COURSES' LABORATORY

Room responsible person: Tove Larsen

ROOM ACTIVITIES

- Students' lab courses' laboratory in medicinal formulation

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Freezedryer	Tove Larsen	Tove Larsen	Can be used in the night

Risk	Preventive measure

BL25179 BL 25179C

Room responsible person: Tove Larsen
Training responsible person: Tove larsen

ROOM ACTIVITIES

- Production of and characterisation of nano particles

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
All instruments	ToveLarsen	Tove Larsen	

SOP for using the equipment can be found in a binder in the bookshelf in room 180b

Reservations for using the equipment should be noted on the whiteboard.

RULES

- All dishes should be rinsed with water or alcohol, and then be collected in the blue tub to be washed in the lab washer, or kept soaking in the blue tub. Water should be replaced when needed, baut at least every week.
- Keep things tidy, refill commodities when needed..
- All stored samples should be labelled.
- Rotavapor and extruder should not be used after normal working hours.

Risk	Preventive measure
Rotovapor and extruder (vacuum and pressure), PRESSURIZED GAS	SOP and attendance See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

BL25183

Room responsible person: Hoai T. N. Aas
Training responsible person: H. Aas- H.H. Tønnesen- T. Larsen

ROOM ACTIVITIES

- Instruments' laboratory with gas

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Suntest, chromometer	H.H. Tønnesen	H.H. Tønnesen	
DSC	T. Larsen	T. Larsen	
HPLC	H. Aas	H. Aas	

Risk	Preventive measure
Rotovapor and extruder (vacuum and pressure), PRESSURIZED GAS	SOP and attendance See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

BL25186

Room responsible person: Hoai T. N. Aas
Training responsible person:

ROOM ACTIVITIES:

- Wet laboratory and monochromator room

RULES

- Keep chemicals and solvents in the locker.
- Solvents should be disposed of in the containers in the fume hood in room 160. Use the dedicated buckets for transporting solvent bottles.
- How to clean the glassware: Put it in a tub with diluted Deconex solution (compounds insoluble in water are rinsed with alcohol). Wash the glassware in the lab washer. After drying the glassware should be sorted and placed in their respective drawers and cupboards. (Glassware should not be left on the drying rack when it's dry).
- Do not leave the lab without refilling commodities.
- Always alert the buyer in due time when commodities have to be ordred
- The water supply for the water still must be turned out during the night

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
All instruments	Solveig Kristensen		

Risk	Preventive measure
Rotovapor Acids and solvents Pressureized gas cylinders	Work in a fume hood and always wear protective gear. See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders.

BL25188

Room responsible person: Hoai T. N. Aas
Training responsible person: H. Aas- H.H. Tønnesen

ROOM ACTIVITIES

- Instruments' laboratory with gas

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
UV and HPLC	H. Aas	H. Aas	
Fluorometer	S. Kristensen	S. Kristensen	
Lifetime spectrophotometer	H.H. Tønnesen	H.H. Tønnesen	

Risk	Preventive measure
Pressureized gas	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

BL25224

Room responsible person: Hoai T. N. Aas

Training responsible person: Jan Karlsen

ROOM ACTIVITIES

- Instruments' laboratory with gas

Risk	Preventive measure
Pressureized gas	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

ROUTINES AT THE DEPARTMENT OF PHARMACEUTICAL BIOSCIENCES

HSE

Health, Safety and the Environment in the workplace

Version 2010

Universitety of Oslo
School of Pharmacy
Department of Pharmaceutical Biosciences

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BL21: CLEANING ROUTINES IN THE ZEB-BUILDING

Responsible person: Mona Gaarder tlf.44928/45

RULES

- Bring the wash down each morning or when the baskets are filled enough
- Do the washing in the lab washer.
- Put the wash in the electric drying cabinet
- After drying distribute to the cabinets, autoclavation and dry sterilization
- Bring down floating bacterial waste from all groups for autoclavation
- Pack the equipment for autoclavation and place it by the autoclave. Run autoclavation when there is enough to fill up an autoclave.
- ”Pack” equipment for dry sterilization and put it in the heating oven that is used for drysterilization. Start sterilization when there is a reasonable amount of equipment.
- Put yellow and blue tips, Eppendorf tubes and kits for autoclavation.
- If you have any spare time, please bring filled risk waste containers down, and clear away glassware and clutter that has been forgotten. Perhaps you can clean up around for instance the electrophoresis equipment or other things.

One of the engineers will accompany everyone the first week as a monitor, to ensure that everyone are trained in using the autoclave, the dry sterilization unit and the lab washers.

BL21 2U27: FREEZER ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz/Anne Lise Rishovd

ROOM ACTIVITIES

- Storage of bacteria collection
- Storage og reagents

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Freezer - 20°C	Ewa Jaroszewicz	Ewa Jaroszewicz	
Freezer - 80°C	Ewa Jaroszewicz	Ewa Jaroszewicz	
Freezer - 80°C	Anne Lise Rishovd	Anne Lise Rishovd	

RISK ANALYSIS

Risk	Precaution
Storage of spore-forming bacteria.	Use safety equipment

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 2U53: ISOTOPE ROOM, CLASS B

(Last update 01.11.2010)

Room responsible person: Ewa Jaroszewicz

Training responsible person: Ewa Jaroszewicz, local radiation protection coordinator for ZEB

ROOM ACTIVITIES

- Work with isotop ^{125}I, ^{32}P, ^{35}S

RULES

- General rules for isotoplaboratory class B

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Beta/Gamma counter, scintallation counter	Ewa jaroszewicz	Ewa Jaroszewicz	
Geiger-Muller detector	Ewa Jaroszewicz	Ewa Jaroszewicz	
Vertical electroforese	Ewa Jaroszewicz	Research group	

RISK ANALYSIS

Risk	Precaution
Exposure to radioactive materials.	All users must have completed an approved course.
	Read Safety Data Sheet and radiation protection regulations in advance.
	All users have to wear personaldosimeter.
	Use safety equipment when handling radioactive materials.
	Use 1 cm perspex (Plexiglass) as shilding.
	Work in fume hood.
	Regular monitoring for contamination is required.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye wash bottles
- Plexiglass shield
- Plexiglass boxes for radioactive waste

BL21 2U54: FREEZING ROOM – 80 ° CENTIGRADE

Room responsible person**:** Ragnhild Paulsen (RP), office no. 253, tlf 44936

ROOM ACTIVITIES

Sample storage at minus 80 degrees centigrade in two separate freezers.

RULES

- The door into the room must always be locked.
- Place the samples in labelled boxes, which again are stored in racks. Each rack should be named. Be careful not to damage the polystyrene covers.
- The freezers' alarms are (for the time being) not connected to the alarm central. We have to be alerted if the alarmis activated.

INSTRUMENTER

2 Forma Scientific – 86C Freezer (ultrafreezers).

Responsible person: Ragnhild Paulsen

Training responsible person: Ragnhild Paulsen

BL21 2U63A: STORAGE ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Storage of various equipment

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes

RISK ANALYSIS

Risk	Precaution
No risk	

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 2U63B: ATOMIC FORCE MICROSCOPY ROOM

(Last update 22.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ida K. Hegna/Ewa Jaroszewicz

ROOM ACTIVITIES

- Research
- Use of instrument in nanotechnology

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Atomic Force Microscop, Nano Wizard from JPK with microskop from Nicon	Ida K. Hegna/ Ewa Jaroszewicz	Ida K. Hegna/ Ewa Jaroszewicz	
Active vibration isolation system MOD-1, HALEYONICS	Ida K. Hegna/ Ewa Jaroszewicz	Ida K. Hegna/ Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
No	

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 2U67: FREEZER/COLD ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Storage of various reagents at + 4°C and – 20°C.

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
No			

RISK ANALYSIS

Risk	Precaution

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 2U68: MOLECULAR DYNAMICS STORM 860

Room responsible person: Tor Gjøen tlf.44943

ROOM ACTIVITIES:

"Phosphor Imager" cassette reading and blot scanning (chemoluminescence or fluorescence (quantifying western, northern and southern blots).

RULES:

- New users have to contact Tor Gjøen for training and a review of the procedures.
- You have to keep your own cassettes. They are expensive and are easily broken.
- Makes sure that western/southern blot are wrapped in plastic before they are put in the cassette or are scanned.
- Refer to the instrument manual for information on functions, sensitivity and use of the scanner before you plan to scan your plots. You will find the manual at the instrument.
- Do not scan with higher resolution than 200 µm. Your data files will get bigger, but they will not give you better quality.
- Log on and save your scans on your own directory.
  Install the image editing software on your own computer, and edit your images in your office.

INSTRUMENTS:

Fume cupboard with a drain

Molecular Dynamics Storm 860 scanner

Computer

Lamp for resetting cassettes

Instrument responsible person: Tor Gjøen

BL21 1U51: COURSE ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Course supervisor/ Engineer

ROOM ACTIVITIES

- Courses

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Various equipment.	Ewa Jaroszewicz	Cours supervisor/ Engineer	

RISK ANALYSIS

Risk	Precaution
Work with bacteria and fungi.	Use safety equipment: lab coat. Gloves and googgles are used when work requires that.
	Clean up spillage of bacteria or fungi with 70 % EtOH
Exposure to harmful chemicals.	Use safety equipment. Work in the fume hood.
	Read Safety Data Sheets in advance.
Work with an open gas flame.	Students must familiarize themselves with placement of fire equipment, fire alarms, emergency exits, emergency showers.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower
- Fire equipment
- Fire blanket
- Eye wash bottles

BL21 1U53: CENTRIFUGE/BACTERIA GROWING ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Centrifugation
- Growing of bacteria

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Centrifuge, Beckman	Ewa Jaroszewicz	Ewa Jaroszewicz	
Table incubator, New Brunswick Scientific	Ewa Jaroszewicz	Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
Exposure to spore-forming bacteria and fungi	Use safety equipment.
	Clean up spillage of bacteria with 70 % EtOH.
	All bacterial waste must be autoclaved.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 1U53: COOLING ROOM

Room responsible person: Mona Gaarder, tlf. 44945/28

ROOM ACTIVITIES:

- Storing material for lab course use.

RULES

- Keep things in order.

BL21 1U62: LAB COURSE PREPARATION ROOM

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM AVTIVITIES

- Lab course preparation: Cultivation of bacteria and fungi.

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
PFGE- Instrument: Bio-Rad CHEF-DR III system, Beckman GeneLine	Ewa Jaroszewicz	Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Preventive measure
Pathogenic bacteria	Use a labcoat and gloves. Avoid any spillage.
Fungi	Use a labcoat and gloves, and a face mask
Gas jet	Be careful when you use it

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washer
- First aid kit

BL21 1U64: POLAROID CAMERA ROOM (NOT NAMED) BY THE ELEVATOR

Room responsible person: Ole Andreas Løchen Økstad
Training responsible person: Ole Andreas Løchen Økstad

ROOM ACTIVITIES

- Photographing (documentary proof)of results at visible light.
- Photographing (documentary proof)of results at UV light.
-

RULES

- Tidy up!
- Clean the light box with alcohol when you are finished.
- Do not use the equipment until you are fully trained
-

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Polaroid camera and UV light box	Ole Andreas Løchen Økstad		

RISK ANALYSIS

Risk	Preventive measure
Do not expose your skin or eyes to UV light	Wear a face shield, gloves and a lab coat.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- None

BL21 1U65: WEIGHING ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Storage of chemicals
- Making of solutions and media
- pH-measure
- Storage of Safety Data Sheets

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
pH-meter, 744 Metroholm	Ewa Jaroszewicz	Ewa Jaroszewicz	
Weights	Ewa Jaroszewicz	Ewa Jaroszewicz	
Heating plates	Ewa Jaroszewicz	Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
Exposure to harmful chemicals.	Read Safety Data Sheets in advance.
	Use safety equipment when handling chemicals.
	Work in fume hood.
	Clean up spillage of chemicals immediately.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 1U67: MEDIUM CULTIVATION ROOM

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM ACTIVITIES

- Lab couse preparation
- Manufacturing of cultivation dishes
- Preparations before autoclavation

INSTRUMENTER/UTSTYR

Name/type	Responsible person	Training responsible person	Notes
Disc distributing machine	Mona Gaarder	Mona Gaarder	
Dry sterilization unit	Mona Gaarder	Mona Gaarder	
Water bath	Mona Gaarder	Mona Gaarder	
Micro wavw oven	Mona Gaarder		
Beckman spectophotometer	Mona Gaarder	Mona Gaarder	
Genius PCR machine	Mona Gaarder		

RISK ANALYSIS

Risk	Preventive measure
None	

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washer
- Fire extinguisher
-

BL21 1U69: AUTOCLAVE/CLEANING ROOM

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM ACTIVITIES

- Cleaning equipment in the lab washer.
- Autoclavation of equipment, fluids and bacterial waste..

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Autoclave large. Thune	Mona Gaarder	Mona Gaarder	
Autoclave small. HMC	Mona Gaarder	Mona Gaarder	
2 lab washers. Miele	Mona Gaarder	Mona Gaarder	
MQ og RO water purifying equipment Millipore	Mona Gaarder	Mona Gaarder	

RISK ANALYSIS

Risk	Preventive measure
Pathogenic bacteria	Wear a labcoat and gloves. Avoid any spillage.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washer

BL21 151: CELL CULTIVATION LABORATORY

Room responsible person: Mona Gaarder
Training responsible person: ISA group: Anne-Lise Rishovd/Tor Gjøen
Neuro group: Mona Gaarder/Ragnhild Paulsen

ROOM ACTITIVIES

- Cultivation of virus from fish
- Cultivation of cell lines
- Preparation of primary cultures

INSTRUMENTS AND EQUIPMENT

Name/type	**Responsible person**	**Training responsible person**	**Notes**
Termo Forma cupboard with Hepafilter and CO_2. Forma Scientic cupboard with CO_2	Mona Gaarder og Ragnhild Paulsen	M. Gaarder og R.Paulsen	
Incubator for fish 15^o og 20^o degrees centigrade' Termaks	Anne-Lise Rishovd og Tor Gjøen	A.L.Rishovd og T. Gjøen	
Water bath: Grant	Mona Gaarder	M. Gaarder	
LAF-Bench x 2: Holten Safe 2000	Mona Gaarder/ Anne-Lise Rishovd	M.Gaarder/A.L.Rishovd	
Nikon TMS Microscope	Mona Gaarder	M.Gaarder	

RISK ANALYSIS

Risk	**Preventive measure**
Pressureized gas	The cylinders are securely tightened
Gas jet	Be careful when you use it
Chemicals	Read the safety data sheet before handling chemicals. Always wear a lab coat and gloves. If necessary, also use protective goggles and a face mask.
Biological material	Use a lab coat and gloves

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguishing equipment
- Eye washer

BL21 152: COLD ROOM

Room responsible person: Anne-Lise Rishovd
Training responsible person: Research groups

ROOM ACTIVITIES

- Reasearch activites
- Store room
- N2 tank

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
BioRad Power Pac 300	Anne-Lise Rishovd	Research groups	
Horisontal shaker GFL 3005	Anne-Lise Rishovd	Research groups	
Roller Mixer SRT2 Stuart Scientific	Anne-Lise Rishovd	Research groups	
Centrifuge Wifug	Anne-Lise Rishovd	Research groups	
Roller Labinco	Anne-Lise rishovd	Research groups	
LS4800 Taylor Wharton Nitrogen tank	Mona Gaarder	Mona Gaarder	

RISK ANALYSIS

Risk	Preventive measure
Fluid nitrogen	Protective plexiglas mask, insulated gloves, coat
Methanol contaning solutions	Nitril gloves,protective glasses
In general	GLP (Good Laboratory Pratice)

HSE INSTALLATIONS

- Safety equipment for handling of nitrogen

BL21 153: MICROSCOPY ROOM

Room responsible person: Karen A. Boldingh Debernard
Training responsible person: Each research group

ROOM ACTIVITIES

- Microscopy

RULES

- You are not allowed to use the instruments without any training.
- Do not fix anything if you do not know what it is.
- See the instructions at the microscopy room for lighting and extinction of UV-lamps, cleaning of the lenses and so on
- As for confocal – see separate instruction explaining how to switch the instruments on and off.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Nikon Eclipse TE300 microscope with Intensilight C-HGFI	Ragnhild Paulsen /Tor Gjøen	Each research group	
Nikon Elipse TE 2000-E microscope with D-Eclipse C1 (confocal), 3 lasers INU Tokai hit TMC air table Gas cylinders	Ragnhild Paulsen /Tor Gjøen		Training course or similar type of experience is necessary before you are allowed to use the confocal microscope.
Labophot-2 fluorescence mikroskop	Ida Hegna/Ewa Jaroszewicz		

RISK ANALYSIS

Risk	Preventive measure
As a general rule there is a low risk of being injured when the equipment in this room is used as it is meant to be.	
The confocal microscope uses <u>lasers in class 3B.</u>	Authorized users only are allowed to use the instrument. Never look into the laser beam. Do not detach anything. Cool the lasers after use.
Mercury lamps are used for UV light.	Never look into the UV light. Refer to the separate instruction on replacing lamps, working hours etc. In the case of an accident – pull out the plug, leave the room, ventilate thoroughly for at least 30 minutes before tidying.
Pressureized gas cylinders	The cylinders are securely tightened to the wall

BL21 155: RESEARCH LABORATORY

Room responsible person: Hanne C. Winther-Larsen
Training responsible person: Hanne C. Winther-Larsen/Anne-Lise Rishovd

ROOM ACTIVITIES

- Research activitites
- RNA work
- Use of instruments

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Mini centrifuge 7M	Hanne Winther-Larsen	Hanne Winther-Larsen/ Anne-Lise Rishovd	
Mini centrifuge Galaxy ministar	Hanne Winther-Larsen	Hanne C. Winther-Larsen/ Anne-Lise Rishovd	
Incubator Innova 4230	Hanne Winther-Larsen	Hanne C. Winther-Larsen/ Anne-Lise Rishovd	
Fume hood	Hanne Winther-Larsen	Hanne C. Winther-Larsen/ Anne-Lise Rishovd	
Gel-electrophoreses for RNA in fume hood	Ewa Jaroszewicz	Ewa Jaroszewicz / Research groups	
Bosch -20° C freezer	Mona Gaarder	Mona Gaarder	
Combi fridge/freezer	Hanne Winther-Larsen	Hanne C. Winther-Larsen/ Anne-Lise Rishovd	
Simens - 20° C freezer	Anne-Lise Rishovd	Anne-Lise Rishovd	

RISK ANALSIS - GENERAL LABORATORY RULES

Risk	Preventive measure
Chemicals	Read Safety Data Sheet in advance. Use lab coat and glows. Protective glasses and mouth and nose protection if necessary. Work in fume hood if necessary. Clean up spillage of chemicals immediately.
Biological material	Use lab coat and glows. Avoid spillage
Gass and gassburner in fume hood	Use with caution. Ensure that the gas burners work properly. They must not burn unnecessary, and they shall be closed when leaving the laboratory.

HSE INSTALLATIONS

- **EYE WASH BOTTLE**

(Last template update: 05.11.2010)

BL21 156: CENTRIFUGE ROOM

Room responsible person: Anne-Lise Rishovd
Training responsible person: Reseach groups and Tor Gjøen

ROOM ACTIVITIES

- Use of centrifuges

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Beckman Avanti J-25 High Speed	Anne-Lise Rishovd	Reseach groups	
Sorval RC 3C Plus Low Speed	Anne-Lise Rishovd	Reseach groups	
Sorval Discovery 100 Ultrasentrifuge	Anne-Lise Rishovd	Tor Gjøen	
Sorval Crimper	Anne-Lise Rishovd	Reseach groups	

RISK ANALYSIS

Risk	Preventive measure
Heavy equipment	Careful while carring rotor. Do not carry if you have a troublesome back.
Spillage of bacterial culture	Avoid spillage. Handling spillage with disinfectant thoroughly and clean all surfaces.

HSE INSTALLATIONS

- None

(Last template update: 05.11.2010)

BL21 163A: FILM DEVELOPING ROOM

Room responsible person: Anne-Lise Rishovd
Training responsible person: Anne-Lise Rishovd

ROOM ACTIVITIES

- Develop films
- Use of UV box

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
AGFA Curix 60	Anne-Lise Rishovd	Anne-Lise Rishovd	
UV Translink 20.S	Anne-Lise Rishovd	Reseach groups	

RISK ANALYSIS

Risk	Preventive measure
Chemical solutions	Use safety glasses handling chemicals, and rubber gloves
UV	Use safety glasses and gloves, no bare skin while cutting gels.

HSE INSTALLATIONS

- Protective plexiglas mask

BL21 163B: ELECTROPHORESIS LABORATORY

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM ACTIVITIES

- DNA separation using normal electrophoresis

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Easy-Cast Elektrophoresis system	Mona Gaarder	Mona Gaarder	
Pharmacia Elektrophoresis equipment	Mona Gaarder	Mona Gaarder	
Power Supply Biorad	Mona Gaarder	Mona Gaarder	
EtBr-sensor Vilber Lourmat	Mona Gaarder	Mona Gaarder	
Light box			

RISK ANALYSIS

Risk	Preventive measure
Etbr (may cause mutation)	Wear protective goggles, labcoat and gloves

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washer

BL21 164: PROTEIN LABORATORY

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM ACTIVITIES

- Moulding, running and blotting acrylic amide gels
- Weighing
- Use of microwave oven

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Scale AND	Mona Gaarder	Mona Gaarder	
Scale METTLER	Mona Gaarder	Mona Gaarder	
Heating block	Mona Gaarder		
Shaker	Mona Gaarder		
Biorad powerpac 300	Mona Gaarder	Mona Gaarder	
Microwave oven Whirlpool	Mona Gaarder		

RISK ANALYSIS

Risk	Preventive measure
Acrylic amide	Wear protective goggles, labcoat and gloves. Work in the fume hood.
Buffer containing methanol	Wear nitrile gloves and labcoat. Work in the fume hood.
Chemicals	Read the safety data sheet before handling chemicals. Always wear a lab coat and gloves. If necessary, also use protective goggles and a face mask.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fume cupboard
- Eye washer

BL21 166: RESEARCH LABORATORY

Room responsible person: Mona Gaarder
Training responsible person: Mona Gaarder

ROOM ACTIVITIES

- Research work

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Centrifuge Biofugo pico	Mona Gaarder	Mona Gaarder	
Centrifuge Biofugo fresco	Mona Gaarder	Mona Gaarder	
Gel doc Biorad	Mona Gaarder	Mona Gaarder	
2 water baths	Mona Gaarder		
PTC-machine	Anne-Lise Rishovd	Anne-Lise Rishovd	
ABI 6100 Nucleic Acid Prepstation	Anne-Lise Rishovd	Anne-Lise Rishovd	
ABI 2720 Thermed Cycler	Anne-Lise Risovd	Anne-Lise Rishovd	

RISK ANALYSIS

Risk	Preventive measure
Gas jet	Be careful in use
Chemicals	Read the safety data sheet before handling chemicals. Always wear a lab coat and gloves. If necessary, also use protective goggles and a face mask.
Biological material	Use labcoat and gloves. Avoid any spillage.
Pathogenic bacteria	Use labcoat and gloves. Avoid any spillage.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket and fire extinguisher
- Eye washer
- Fume hood
- Ventilated chemical locker

BL21 167: RESEARCH LABORATORY

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Research
- Use of instruments

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
2 PCR-blocks	Ewa Jaroszewicz	Ewa Jaroszewicz	
3 Table centrifuges, Heraeus	Ewa Jaroszewicz	Ewa Jaroszewicz	
UV-transmission apparatus, Fluo Link from Vilber Lourmat	Ewa Jaroszewicz	Ewa Jaroszewicz	
Fume hood, Normodul	Ewa Jaroszewicz	Ewa Jaroszewicz	
Distillation apparatus	Ewa Jaroszewicz	Ewa Jaroszewicz	
Water bath	Ewa Jaroszewicz	Ewa Jaroszewicz	
Microwave	Ewa Jaroszewicz	Ewa Jaroszewicz	
Heating blocks	Ewa Jaroszewicz	Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
Exposure to harmful chemicals.	Read Safety Data Sheets in advance.
	Use safety equipment.
	Work in fume hood.
	Clean up spillage of chemicals immediately.
Work with an open gas flame.	Use with coution. Ensure that the gas burners work properly. They must not burn unnecessary, and they shall be closed when leaving the laboratory.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower
- Fire equipment
- Fire blanket
- Eye wash bottles

- (Last template update: 05.11.2010)

BL21 168 INSTRUMENT ROOM

Room responsible person: Anne-Lise Rishovd
Training responsible person: Reseach groups

ROOM ACTIVITIES

- Use of analytical instruments

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
ChemiGenius,Bio Imaging System	Anne-Lise Rishovd	Reseach groups	
LightCycler 480, qPCR	Anne-Lise Rishovd	Reseach groups	
Galaxy S PLUS, Picodrop	Anne-Lise Rishovd	Reseach groups	

RISK ANALYSIS

Risk	Preventive measure
None in particular	GLP

HSE INSTALLATIONS

- None

BL21 169: ELECTROPHORESIS ROOM

(Last update 21.06.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Electroforese
- Drying of acrylamide gels
- Nitrogen flask for AFM-work

RULES

- General laboratory rules

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
Electroforese equipment	Ewa Jaroszewicz	Ewa Jaroszewicz	
Gel drying apparatus	Ewa Jaroszewicz	Research group	
Nitrogen flask	Ida K. Hegna/ Ewa Jaroszewicz	Ida K. Hegna/ Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
Exposure to Ethydium bromide, acrylamid	Read Safety Data Sheets in advance.
	Use saefty equipment. EtBr is mutagenic.
Nitrogen gas under pressure	Nitrogen flask must be properly secured.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

BL21 170: P-2 ROOM

(Last update 01.11.2010)

Room responsible person: Ewa Jaroszewicz
Training responsible person: Ewa Jaroszewicz

ROOM ACTIVITIES

- Growing of spore-forming bacteria
- Electroporation
- OD-measure

RULES

- General laboratory rules
- Procedures for handling of spore forming bacteria

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Notes
LAF-bench, Holten Lamin Air	Ewa Jaroszewicz	Ewa Jaroszewicz	
Spectrofotometer, Eppendorf	Ewa Jaroszewicz	Ewa Jaroszewicz	
Various eqipment	Ewa Jaroszewicz	Ewa Jaroszewicz	
Equipment for electroporation from BioRad	Mona Gaarder	Mona Gaarder	
2 CO_2 incubators	Ewa Jaroszewicz	Ewa Jaroszewicz	
2 Incubators	Ewa Jaroszewicz	Ewa Jaroszewicz	

RISK ANALYSIS

Risk	Precaution
Exposure to spore-forming bacteria.	Use safety equipment.
	Work in LAF-bench.
	Clean up workplace before and after with 70 % EtOH.
	Liquid bacteria waste must be autoclaved.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- No

CLEANING PROCEDURES IN THE THIRD FLOOR

We have now decided to combine the monitor- and cleaning duty lists for the cell lab. Therefore, two and two of us work together in doing both tasks in a two-week period. Make sure that each and everyone notices their cleaning duty weeks! If needed, you can change places with eachother internally!

After laboratory work the users must tidy up in the lab and put the dishes in tubs and bowls.

Drawing ink labels should be removed with technical acetone.

Any specific dishes are addressed by the users themselves.

The dishes from the laboratories number 407, 409, 411, 475, 477 and 483 are to be put in tubs.

The person who has the cleaning job that week, brings these dishes to room 409 where it is washed in the lab washer.

When this is done, the dishes is placed in drying baskets in room 409.

When the dishes are dry, their openings are covered with tinfoil, and the glassware is sorted and placed in the cupboards in room 409.

Pipette tips have to be filled up by the one who empties the box.

Pipette tips for autoclavation should be placed in a cupboard in room 477.Tips that fits these boxes can be found in the drawers there.

Old adhesive tape must be removed and a new one is put on.

Empty glasses for eppendorf tubes that are going to be autoclaved must be filled up. You will find the eppendorf tubes in room 477.

ALWAYS WEAR GLOVES, AND MAKE SURE THE WORKING SURFACE IS CLEAN WHEN YOU FILL UP BOXES WITH TIPS AND GLASSES WITH EPPENDORF TUBES.

Autoclavation of tips, eppendorf tubes and the metal tubes for the Pasteur pipettes is done by the persons who have their cleaning week duty. If you need training in using the autoclave, ask one of the engineers at the department.

Equipment that is autoclaved should be placed in the cupboard in room 477.

Autoclaved Pasteur pipettes should be put in the cupboard in the cell lab.

- Also remember to bring hazardous waste to room 025 in the basement when the box is filled up. Do not leave it in the corridor in the third floor.
- Polystyrene boxes should be disposed of in the container at the Department of Chemistry.
- Glass waste is disposed of by one of the engineers when it is needed.

The cleaning week duties are as follows:

Collect the dishes in the tubs, start the lab washer, put the dishes on the drying racks, put on tinfoil, and place the dried equipment in the cupboards in room 409.

The chemicals and the scales must be kept in order.

Autoclaving various equipment.

Waste disposal and making ready with new waste boxes.

A list with the cleaning week shift rotation should be placed in the washing room and in the cell lab. The list should be signed when the work is done. The tasks in the cell lab is described outside the door in the cell lab.

(Last template update: 08.11.2010)

BL25 310: NITROGEN TANK IN COLD STORAGE

Room responsible person: Siri Johannesen, phone 56558
Training responsible person: Siri Johannesen

ROOM ACTIVITIES

- Freezing of cells

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Locator JR-Cryo Biological Storage SystemsXxxx	Siri Johannesen		
Thermo Liquidnitrogen monitor	Siri Johannesen		

RISK ANALYSIS

Risk	Preventive measure
Tubes may explode when taken out of the cryo	Use mask and mittens when you fetch out the cells

HSE INSTALLATIONS

- **NO**

(Last template update: 12.11.2010)

BL25 407: ISOTOPE LABORATORY 1

Room responsible person: Camilla Stensrud

Training responsible person: Arild Rustan

ROOM ACTIVITIES

- Radioactive isotopes are measured in a scintilation countermachine.
- Sonication
- Use of utrationbath

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Scintillation counter, 1450 Microbeta plus	Arild Rustan	Arild Rustan	
Scintillation, Betacounter, model TRI CARB 1900 TR	Arild Rustan	Arild Rustan	
Ultrasonic Processor	Engineer	Engineer	
Ultrabad, Sonorex AK 100	Engineer	Engineer	
Ultrabad, Bransonic 220	Engineer	Engineer	
Termax, serie 4000	Engineer	Engineer	
Laserprinter	Hilde Nilsen	Engineer	
Refridigator/ freezer			K 8, F 9 og F 10

RISK ANALYSIS

Risk	Preventive measure
Isotopes – radiation (^{3}H and ^{14}C)	Use googels and glows. Every user has to attend an aproved course in Radiation protection and radioactivity.
Special procedure for working with isotopes	

HSE INSTALLATIONS

- Riskwaste
- Separat riskwaste for radioactiv waste.
- Eyewash bottle
- Fire extinguisher
- Fire blanket

(Last template update: 01.12.2010)

BL25 408: EXTRACTION/THIN LAYER ROOM

Room responsible person: Arild Rustan, phone 56558
Training responsible person: Arild Chr. Rustan

ROOM ACTIVITIES

- Extraction of lipids
- Thin layer chromography

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Gas bottle	Arild Rustan	Arild Rustan	
Termaxs Incubator Cabinet	Arild Rustan	Arild Rustan	

RISK ANALYSIS

Risk	Preventive measure
Isotop, radiation hazard	All users must complete an approved course
Solvents	Work in the safety bench, use gloves

HSE INSTALLATIONS

- **EYE WASH BOTTLE**
- **FIRE EXTINGUISHER**

(Last template update: 03.11.2010)

BL25 409: CHEMICAL/WEIGHT ROOM

Room responsible person: Hilde Nilsen, phone, 56547
Training responsible person: Hilde Nilsen

ROOM ACTIVITIES

- Making solutions
- pH adjustment
- Chemical registration

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Sartorius basic x2	Hilde Nilsen	Hilde Nilsen	
Sartorius 1205 P	Hilde Nilsen	Hilde Nilsen	
Ohaus Model TS 120S	Hilde Nilsen	Hilde Nilsen	
Mettler Toledo	Hilde Nilsen	Hilde Nilsen	
pH- meter,PHM 210	Hilde Nilsen	Hilde Nilsen	
Miele oppvaskmaski	Hilde Nilsen	Hilde Nilsen	

RISK ANALYSIS

Risk	Preventive measure
Chemicals	Use mask and gloves

HSE INSTALLATIONS

- **EYE WASH BOTTLE**
- **FIRE EXTINGUISHER**

(Last template update: 08.11.2010)

BL25 411: HPLC ROOM

Room responsible person: Siri Johannesen,office 475B, phone 56554
Training responsible person: Siri Johannesen

ROOM ACTIVITIES

- Sentrifugation
- Microsome isolation
- Cell experiments
- Metabolism experiments
- Sample preparation
- HPLC

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
HPLC Perkin Elmer	Siri Johannesen	Siri Johannesen	
HPLC LKB	Siri Johannesen	Siri Johannesen	
Supelco Phase extraction	Siri Johannesen	Siri Johannesen	
Optima ultra sentrifuge	Siri Johannesen	Siri Johannesen	
Agilent HPLC	Anders Aasberg	Anders Aasberg	

RISK ANALYSIS

Risk	Preventive measure
Chemicals	Use googles, gloves and back bench

HSE INSTALLATIONS

- **FIRE EXTINGUISHER**
- **FIRE BLANKET**
- **EYEWASH BOTTLE**

(Last template update: 02.11.2010)

BL25 413E: WESTERN ELECTROPHORESIS LAB

Room responsible person:Hilde Nilsen, tlf 56547
Training responsible person:Hilde Nilsen and Siri Johannesen

ROOM ACTIVITIES

- Electropheresis
- Casting protein gels
- Casting agarose gels
- Developing

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Electropheresis equipment	Hilde and Siri	Hilde and Siri	
Hoefer gel washer	Hilde and Siri	Hilde and Siri	
Spectrophotometer	Hilde and Siri	Hilde and Siri	
Polaroid gel Kamera	Beata	Mohebi	

RISK ANALYSIS

Risk	Preventive measure
Acrylamide	Cast gels in safety bench, use gloves
Mercaptoethanol	Pippette in safety bench, use gloves
Eth. bromide	Pippette in safety bench, use gloves

HSE INSTALLATIONS

- **EYE WASH BOTTLE**

(Last template update: 11.11.2010)

BL25 413J (OUTSIDE): SORVAL ULTRA CENTRIFUGE

Room responsible person: Siri Johannesen, phone 56554
Training responsible person: Siri Johannesen

ROOM ACTIVITIES

- Sentrifugation

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Sorval Ultra PRO 80 Ultrasentrifuge	Siri Johannesen	Siri Johannesen	

RISK ANALYSIS

Risk	Preventive measure
Inbalance	Remember to use adapters, and balance the tubes before sentrifugation.

HSE INSTALLATIONS

- **NO**

(Last template update: 11.11.2010)

BL25 477: DNA/RNA LAB

Room responsible person: Beata Mohebi, phone 56554
Training responsible person: Beata Mohebi

ROOM ACTIVITIES

- PCR
- Realtime PCR
- DNA/RNA quantitation
- Sentrifugation
- RNA isolation
- Casting gels
- Blood sampling

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
RT-PCR ABI PRISM 7000	Beata Mohebi	Beata Mohebi	
Gen Amp PCR systems 9700	Beata Mohebi	Beata Mohebi	
Gene Quant UV/Visible spektrophotometer	Beata Mohebi	Beata Mohebi	
Qubit Flurometer	Hilde Nilsen	Hilde Nilsen	
Heraeus Fresco 21 sentrifuge	Beata Mohebi	Beata Mohebi	
Hettich Universal sentrifuge	Hilde Nilsen	Hilde Nilsen	2 rotorer
Jouan sentrifuge	Beata Mohebi	Beata Mohebi	2 rotorer
Techni Dri Block	Beata Mohebi	Beata Mohebi	

RISK ANALYSIS

Risk	Preventive measure
Inbalance in the sentrifuge	The tubes must be in balance before sentrifugation
Bloodsampling	Contagues materials

HSE INSTALLATIONS

- **EYEWASH BOTTLE**
- **FIRE EXTINGUISHER**

(Last template update: 02.11.2010)

BL25 480: ISOTOPIC LABORATORY

Room responsible person: Arild Chr Rustan, phone 56558
Training responsible person: Arild Chr Rustan

ROOM ACTIVITIES

- Work with radioactive sources
- Storage of radioactove isotopes
- Laboratory is approved as a type C laboratory
- Anyone working with radioactive isotopes shall be completed before start working with radiation and radioactivity

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Sentrifuge: Sigma 2-15X	Arild Rustan	Arild Rustan	
Incubator cabinet, Jouan IGO 150W/ gas sylinder	Arild Rustan	Arild Rustan	
Seiwa Optical Tissue culture microscope,STC-BI	Arild Rustan	Arild Rustan	

RISK ANALYSIS

Risk	Preventive measure
Isotopes	All users must complete an approved course
Gas under pressure	

HSE INSTALLATIONS

- **EYEWASHBOTTLE**
- **FIRE EXTINGUISHER**
- **FIRE BLANKET**
- **GEIGER-MULLER COUNTER**

BL25 481: CELL LABORATORY

Room responsible person: Camilla Stensrud

Training responsible person: Engineer or Camilla Stensrud

ROOM ACTIVITIES

- The major activity is cellgrowth.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
1 Nuire incubator 4500 E, CO2	Camilla Stensrud	Engineer	
1 Nuire incubator 4750 E, CO2	Camilla Stensrud	Engineer	
1 Forma Scientific incubator, CO2	Camilla Stensrud	Engineer	
2 Laf-benches, Holten Safe 2000	Camilla Stensrud	Engineer	
Sentrifuge Kubota 2010	Camilla Stensrud	Engineer	
Microscope Leica DMIL	Camilla Stensrud	Engineer	
Water bath	Camilla Stensrud	Engineer	
Refrigerator and freezer	Camilla Stensrud	Engineer	18K, 19 K

RISK ANALYSIS

Risk	Preventive measure
Biological material- may be contagious	Use glows, a special coat and shoes.
Working with virus	Special procedyre
Gas cylinder	The cylinder is secured
Gas flame	Use carefully
Filling the N2-freezer	Heavy lifting

HSE INSTALLATIONS

- Riskwaste
- Eyewash bottle
- Fire blanket

(Last template update: 08.11.2010)

BL25 484: MICROPLATE READER AND PROTEIN CHROMOGRAPHY

Room responsible person: Harald Thidemann Johansen, phone 56595
Training responsible person: Harald Thidemann Johansen

ROOM ACTIVITIES

- For quantitative detection of light emitting and light absorbing marker
- Detection of protein and enzymes
- Protein chromatography

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
FPLC Chromography	HTJ	HTJ	
Victor 3 – 1420 Multilabel counter	HTJ	HTJ	reservation necessary

RISK ANALYSIS

Risk	Preventive measures
Solvents	Work in safety bench
Chemicals	Use glasses and gloves

HSE INSTALLATIONS

- **EYEWASH BOTTLE**

ROUTINES AT THE DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

HSE

Health, Safety and the Environment in the workplace

Version 2010

Universitety of Oslo
School of Pharmacy
Department of Pharmaceutical Chemistry

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BL23 Ø182B: LABORATORY

Room responsible person: Jo Klaveness
Training responsible person: Jo Klaveness

ROOM ACTIVITIES

- Handling of chemicals
- Organic synthesis
- Preparative chromatography
- Use of instruments (rotavapor, vacuum pumps)
- Use of gas under pressure (nitrogen and argon)

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible	Responsible for training	Comments
2 Rotavapors	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
2 Scales	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Membrane pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 High vacuum pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 UV-lamp	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Oven	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
4 Magnetic stirrers w. temp. control	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Heater	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Bunsen burner	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Fridge/freezer	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (to the left outside the door)
- Eye wash flasks
- First aid kit
- Fire extinguisher (CO_2) and fire blanket
- 1 fume hood

BL23 Ø184: LABORATORY

Room responsible person: Jo Klaveness
Training responsible person: Jo Klaveness

ROOM ACTIVITIES

- Handling of chemicals
- Organic synthesis
- Preparative chromatography
- Use of instruments (rotavapor, vacuum pumps)
- Use of gas under pressure (nitrogen and argon)

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible	Responsible for training	Comments
2 Rotavapors	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
2 Scales	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Membrane pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 High vacuum pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 UV-lamp	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Oven	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
4 Magnetic stirrers w. temp. control	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Heater	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Bunsen burner	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Fridge/freezer	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (to the right outside the door)
- Eye wash flasks
- First aid kit
- Fire extinguisher (CO_2) and fire blanket
- 2 fume hoods

BL24 ØK19A: INSTRUMENT ROOM

Room responsible person: Iuliana Johansen/Atle Haugen
Training responsible person: Iuliana Johansen/Atle Haugen

ROOM ACTIVITIES

- Deposit and withdrawal of organic solvents and NMR-solvents
- Use of instruments
- Solvent drying

RULES

Deposit/withdrawal of the organic and NMR-solvents of most use is exempted from the normal chemicals registration procedures. Each laboratory is registrated with a certain constant amount of the organic and NMR-solvents of most use (refer to ECOonline).

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
NMR-instrument (2-65 MHz): Bruker MiniSpec	Iuliana Johansen/Atle Haugen	Pål Rongved	
C-system: VersaFlash	Iuliana Johansen	Iuliana Johansen	
Sentrifuge: Heraeus Sepatech	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
Water bath w/shaking	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
Water purifying instrument: ELGA Prima and Maxima	Iuliana Johansen	Iuliana Johansen	To prevent any water leakages, please close the dispenser properly.
Braun Labsonic U ultra sonic bath	Iuliana Johansen	Iuliana Johansen	
Coulter Electronics rolling/turning robot	Atle Haugen	Atle Haugen	
Metrohm 718 Stat Titrino titrator	Atle Haugen	Atle Haugen	

RISK ANALYSIS

Risk	Preventive measure
Exposure to harmful chemicals	Use personal safety equipment when handling chemicals
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
	Synthesis products have to be labelled by date, name/producer, product no../journal no., total amount, chemical name and/or structure.

HSE INSTALLATIONS

- Emergency shower (to the left outside the door)
- Fire extinguishing equipment and fire blanket
- Eye wash flasks
- Labelled emergency exit
- List of phone numbers at accidents/injuries

BL24 ØK82: CHEMICALS STORAGE ROOM

Room responsible person: Atle Haugen
Training responsible person: Atle Haugen

ROOM ACTIVITIES

- Deposit and withdrawal of chemicals
- Local reception of chemical waste

RULES

- Deposit, withdrawal and destruction of chemicals has to be registered in accordance with the lists on the door.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments

RISK ANALYSIS

Risk	Preventive measure
Exposure to harmful chemicals	Use personal safety equipment when handling chemicals
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
	Synthesis products have to be labelled by date, name/producer, product no../journal no., total amount, chemical name and/or structure.
Smell and unwanted incidents/accidents in the corridors	Containers of chemicals should be transported in secure vessels or trolleys.

HSE INSTALLATIONS

- Emergency shower (right outside the door)
- Fire extinguishing equipment and fire blanket
- Eye wash flasks
- Absorbent for spilled chemicals and liquids

BL24 Ø187: STUDENTS' COURSES LABORATORY

Room responsible person: Trond Vidar Hansen
Training resposible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Practical teaching of general and organic chemistry for lower-degree students

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
4 scales	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi
4 heating ovens	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi
1 UV-lamp	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi
3 melting point analyzers	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- 20 fume hoods
- 2 emergency showers
- 2 first aid kits
- 2 fire extinguishers CO_2 34B
- 2 fire extinguisher Glutex ABC-powder 89B
- 1 fire blanket
- A water fire hose outside each of the entrances to the room
- Eye washers at every bench
- Absorbent for spilled chemicals and liquids

BL24 Ø188: ROTAVAPOR ROOM

Room responsible person: Trond Vidar Hansen
Training resposible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Solvent evaporation

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
4 rotavapors IKA	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi
2 diaphragm pumps VacuuBrand	Atle Haugen	Atle Haugen	Responsible at the Department of Chemistry: Elhoussine Merrachi

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Clean up spillage of chemicals immediately
	Work benches must be cleaned after use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- emergency shower (in the neighbouring room, Ø187)
- fire extinguisher CO_2 (just outside the door)
- fire extinguisher Glutex ABC-powder (just outside the door)
- water fire hose (just outside the door)
- 6 fume hoods
- first aid kit

BL24 Ø191: MASTER STUDENTS' LABORATORY

Room responsible person: Trond Vidar Hansen
Training responsible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Teaching and supervision of master students
- Practical organic synthesis as part of master theses
- Sample purification using liquid chromatography

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
2 rotavapors	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
Liquid chromatograph-Flash	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
3 scales	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
3 heating ovens	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
2 UV-lamps	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
4 magnetic stirrers with heating	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
2 vacuumpumps	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
2 cylinders of pressurized N_2, 50 L	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
1 heating mantle	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
1 fridge/freezer	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency showe
- Eye wash flasks
- Chemizorb (for collecting spillage of chemicals)
- Fire blanket
- Fire extinguisher (CO_2)
- 7 fume hoods

BL24 Ø192: LABORATORY

Room responsible person: Pål Rongved
Training responsible person: Pål Rongved

ACTIVITIES:

- Common laboratory work

INSTRUMENTS AND EQIUPMENT

Name/type	Responsible	Responsible for training	Comments
1 IKA rotavapor	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
2 IKA magnetic stirrers	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
2 water jet pumps	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 AGA pressureized argon cylinder 200 bar / 3000 psi.	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Thermaks heating oven	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Ohaus laboratory scale	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (5 meters to the right outside the door)
- Fire extinguisher
- Fire blanket
- PLUM eye washer
- First aid kit
- Gas mask
- 1 fume hood

BL24 Ø196 : LC/MS LABORATORY

Room responsible person: Pål Rongved
Training responsible person: Pål Rongved

ROOM ACTIVITIES

- Chemical compound analysis by high pressure liquid chromatography/mass spectrometry
- Student teaching and instruction

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
High pressure liquid chromatography/mass spectrometry, Agilent	Iuliana Johansen/Atle Haugen	Iuliana Johansen	
Nitrogen generator, Agilent	Iuliana Johansen/Atle Haugen	Iuliana Johansen	
Air compressor, Jun-Air	Iuliana Johansen/Atle Haugen	Iuliana Johansen	
Vacuum pump, Edwards	Iuliana Johansen/Atle Haugen	Iuliana Johansen	
Compressed helium, 50 L cylinder	Iuliana Johansen/Atle Haugen	Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
Exposure to harmful chemicals due to insufficient ventilation	Never conduct any experiments involving open fumes of harmful chemicals, neither in the fume hoods or in the room itself
Health injury due to noise	Use protective hearing gear during lasting work in this room

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (to the right outside the door)
- Eye wash flasks
- Fire extinguisher (CO_2)
- Fire blanket
- 2 fume hoods
- Air conditioning system

BL24 Ø197: LABORATORY

Room responsible person: Trond Vidar Hansen
Training responsible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Handling of chemicals
- Organic synthesis
- Preparative chromatography
- Use of instruments (rotavapor, vacuum pumps)
- Use of gas under pressure (nitrogen and argon)

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
1 Rotavapor	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
1 Scale	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
1 Vacuum pump	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
1 Oven	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
1 UV-lamp	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
2 Magnetic stirrers w. temp. control	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	
1 Fridge/freezer	Atle Haugen/Iuliana Johannesen	Atle Haugen/Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Sashes of fume hoods may fall down and injure the person working in front of the hood	Check the steel lines supporting sashes regularly. Report immediately when there is damage with any lines and ask for repairing
Occasional stop of ventilation may cause leak of toxic vapors from fume hood	Be aware of the air flow with the fume hood all the time. If ventilation stops, lower down the sash and leave the room.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (outside the door to the right)
- Eye wash flasks (above the sink)
- Fire blanket ("Brannteppe", above the sink)
- Fire extinguisher (CO_2) (beside the sink)
- 3 fume hoods (1 occupied by rotavapor and vacuum pump)

BL24 Ø198: LABORATORY

Room responsible person: Trond Vidar Hansen
Training responsible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Handling of chemicals
- Organic synthesis
- Preparative chromatography
- Use of instruments (rotavapor, vacuum pumps)
- Use of gas under pressure (nitrogen and argon)

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible	Responsible for training	Comments
2 Rotavapors	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
2 Scales	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Membrane pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 High vacuum pump	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 UV-lamp	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Oven	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
4 Magnetic stirrers w. temp. control	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Heater	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Bunsen burner	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	
1 Fridge/freezer	Atle Haugen/Iuliana Johansen	Atle Haugen/Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (to the left outside the door)
- Eye wash flasks
- First aid kit
- Fire extinguisher (CO_2)
- 3 fume hoods

BL24 Ø199: PH. D STUDENTS' LAB

(Last template update: 11.05.2010)

Room responsible person: Trond Vidar Hansen
Training responsible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Synthetic organic chemistry

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
2 rotary evaporators	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
1 membrane pump VacuuBrand	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
2 water jet pumps	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
4 magnetic stirrer plates	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
UV-lamp	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
Refrigerator with chemicals	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
Laboratory scale	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
2 heating cabinets	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
50 L Nitrogen pressure tank	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	
50 L Argon pressure tank	Iuliana Johansen/Atle Haugen	Iuliana Johansen/Atle Haugen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
Accidents and injuries due to improper handling of pressurized gas cylinders.	See section "The laboratory: Safety and the working environment" in this handbook, to ensure correct handling of pressurized gas cylinders

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (outside the door)
- Fire extinguisher
- Fire blanket
- 3 fume hoods
- Chemical storage cabinet
- Refridgerator

BL24 Ø282 : STUDENTS' COURSES LABORATORY

Room responsible person: Trond Vidar Hansen
Training resposible person: Trond Vidar Hansen

ROOM ACTIVITIES

- Practical teaching of general and organic chemistry for lower-degree students

RULES

- Synthesis products have to be labelled by date, name/producer, product no../journal no., total amount, chemical name and/or structure and should be stored for later use.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
4 scales	Iuliana Johansen	Iuliana Johansen	
3 heating ovens	Iuliana Johansen	Iuliana Johansen	
1 UV-lamp	Iuliana Johansen	Iuliana Johansen	
2 melting point analyzers	Iuliana Johansen	Iuliana Johansen	
20 magnetic stirrers w/ heating plate	Iuliana Johansen	Iuliana Johansen	
20 heating mantles w/magnetic stirring	Iuliana Johansen	Iuliana Johansen	
40 cupboards of glassware	Iuliana Johansen	Iuliana Johansen	
8 pH - meters	Iuliana Johansen	Iuliana Johansen	
6 desiccators w/vacuum	Iuliana Johansen	Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- 20 fume hoods
- 2 emergency showers
- 2 first aid kits
- 2 fire extinguishers CO_2 34B
- 2 fire extinguisher Glutex ABC-powder 89B
- 1 fire blanket
- A fire hose outside each of the entrances to the room
- Eye washers at every bench
- Absorbent for spilled chemicals and liquids

BL24 Ø283: ROTAVAPOR ROOM

Room responsible person: Trond Vidar Hansen
Training resposible person: Trond Vidar Hansen

ROOM ACTIVITIES:

- Solvent evaporation

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
6 rotavaporr IKA/Büchi	Iuliana Johansen	Supervisor/Iuliana Johansen	
1 diaphragm pump VacuuBrand	Iuliana Johansen	Supervisor/Iuliana Johansen	
4 water jet pumps	Iuliana Johansen	Supervisor/Iuliana Johansen	

RISK ANALYSIS

Risk	**Preventive measure**
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Clean up spillage of chemicals immediately
	Work benches must be cleaned after use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- emergency shower (just outside the door)
- fire extinguisher (just outside the door)
- fire blanket (just outside the door)
- 6 fume hoods

BL24 Ø 284: WASHING ROOM/STORAGE ROOM

Room responsible person: Iuliana Johansen
Training responsible person: Iuliana Johansen

ROOM ACTIVITIES

- Glassware deposit and withdrawal
- Use of the lab washer

RULES

- The lab washer can be used after reservation or when it is free
- Everybody must take away their dishes when it is done

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible	Responsible for training	Comments
Industrial washing machine Miele	Iuliana Johansen	Iuliana Johansen	

RISK ANALYSIS

Risk	**Preventive measure**
Exposure to detergents or chemical rests	Use personal safety equipment when handling chemicals
	Clean up spillage of chemicals immediately
	Work benches must be cleaned after use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washers
- Emergency shower (just outside the door)
- Fire extinguisher (just outside the door)
- Fire blanket (just outside the door)

BL24 Ø285 A: CHEMICALS STORAGE ROOM /IR-ROOM

Room responsible person: Iuliana Johansen
Training responsible person: Iuliana Johansen

ROOM ACTIVITIES

- Deposit and withdrawal of chemicals and glassware for the lab courses FRM 1000/1010/1030
- Use of the IR-instrument

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
IR-instrument Perkin Elmer	Iuliana Johansen	Iuliana Johansen	No hood/short of space
PC/ printer connected to the IR-instrument	Iuliana Johansen	Iuliana Johansen	
1 scale	Iuliana Johansen	Iuliana Johansen	

RISK ANALYSIS

Risk	Preventive measure
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Always store chemicals in the chemical storage locker
	Work benches must be cleaned after use
	Clean up spillage of chemicals immediately

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Eye washer
- Emergency shower (just outside the door)
- Fire extinguisher (just outside the door)
- Fire blanket (just outside the door)

BL25 018: MILL ROOM

Room responsible person: Suthajini Yogarajah
Training responsible person:

ROOM ACTIVITIES

- grind raw materials

RULES TO FOLLOW

- User must keep order and clean up after themselves.
- Use appropriate protective equipment.
- The grinders should be cleaned after each use.
- Turn off lights when leaving room for the day.

Instruments and equipment

Name/type	Responsible person	Training responsible person	Comments
BRABENDER Duisburg	Suthajini Yogarajah		
ALPINE Augsburg	Suthajini Yogarajah		
Freezer			

RISK ANALYSIS

Risk	Preventive measure
Harmful noise from instruments	Wear ear protection
Risk of injury from mechanical, grinding parts of the mills	Be careful while operating the mills
	Use appropriate protective equipment.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Ear protection

BL25 037: STORAGE ROOM

Room responsible person: Ellen Hanne Cohen
Training responsible person: Ellen Hanne Cohen

Activities

- Storage of different kinds of goods

BL25 202: HPLC LABORATORY

Room responsible person: Leon Reubsaet
Training responsible person:

ROOM ACTIVITIES

- HPLC lab

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
HPLC Dionex Ultimate	Leon/Stig		
HPLC for use in the lab courses	Leon		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Eye washer

BL25 203: LCMS LABORATORY

Room responsible person: Leon Reubsaet
Training responsible person:

ROOM ACTIVITIES

- LCMS lab

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
LCMS Shimadzu 2010 (2stk)	Leon		
LCMS Finnigan LCQ	Leon		
Sentrifuge Eppendorf 5804	Leon		
Vannrenseanlegg Barnstead	Finn		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Hazardous waste

BL25 203: CAPILLARY ELECTROPHORESIS LABORATORY

Room responsible person: Stig Pedersen-Bjergaard
Training responsible person: Stig Pedersen-Bjergaard

ROOM ACTIVITIES

- Capillary electrophoresis
- Sample processing

RULES

- The users must keep things in order, and tidy up.
- Material that has been in contact with biological fluids, must be put in the biological waste box
- Switch off the light and lock the door when you leave at the end of the day..

INSTRUMENTS AND EQUIPMENT

Name/type	**Responsible person**	**Training responsible person**	**Comments**
CE Agilent (2 pcs)	Stig Pedersen-Bjergaard	Stig Pedersen-Bjergaard	
CE Beckman (2 pcs)	Stig Pedersen-Bjergaard	Stig Pedersen-Bjergaard	
HPLC Agilent	Stig Pedersen-Bjergaard	Stig Pedersen-Bjergaard	

RISK ANALYSIS

Risk	**Preventive measure**
Exposure to harmful biological material	Refer to the chapters on first aid rules and the common routines for safety and the working environment, and for decontamination

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher
- First aid kit

BL25 207: STUDENTS' LAB COURSES LABORATORY

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- Students lab courses

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
pH meter Metrohm 827	Finn		
Scale Mettler Toledo	Finn		
Laboratory washing machine	Finn		
Ultrasonic bath Branson 5510	Finn		

RISK ANALYSIS

Risk	Preventive measure
Health hazard by doing mistake while working in a fume hood	Refer to the Common Routine chapter – Correct Use of Fume Cupboards
Risk of water leakages	Turn out the water supply to the water distillating apparatus at the end of the day. Do not use the distillating apparatus or the lab washer after normal working hours.
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher
- Eye washer

BL25 212: BALANCE ROOM

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- Balance room

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
7 pcs. Mettler AE 200	Finn		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

-

BL25 214: STUDENTS COURSES' LABORATORY

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- Students courses' laboratory

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
UV Beckman DU 520	Finn		
UV Beckman Du 530	Finn		
IR Shimadzu IR 408	Finn		
Tablets press	Finn		
Heating oven	Finn		
Atomic absorption spectrophotometer	Ragnar		
Centrifuge Hettich	Finn		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher (2 pcs.)
- Eye washer

BL25 217: LABORATORY

Room responsible person:
Training responsible person:

ROOM ACTIVITIES

- Lab

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher
- Eye washer

BL25 220: CONFERENCE ROOM

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- Conference room

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

-

BL25 222: LABORATORY

Room responsible person:

Training responsible person:

ROOM ACTIVITIES

- Lab

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Atomic absorption spectrophotometer	Ragnar		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher

BL25 227: CONFERENCE ROOM

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- Conference room

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments

RISK ANALYSIS

Risk	Preventive measurement

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

-

BL25 229: GC/GCMS LABORATORY

Room responsible person: Finn Tønnesen
Training responsible person:

ROOM ACTIVITIES

- GC/GCMS lab

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
GC Fison (8000 series)	Finn		
GC Shimadzu 2010	Finn		
GC Varian Star 3400CX	Finn		
GCMS Fison MD800	Finn		
GCMS Shimadzu 2010	Stig/Finn		

RISK ANALYSIS

Risk	Preventive measure
Leakage of combustible gases from gas cylinders. Risk of explosion at a fire.	Refer to the *Laboratory: Safety and the working environment* chapter for proper use and handling of pressureized gas cylinders.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire blanket
- Fire extinguisher
- Eye washer

BL25 314: COOLING ROOM

Room responsible person: Suthajini Yogarajah
Training responsible person: Supervisor

ROOM ACTIVITIES

- Storage of the gel filtration columns
- Kit and special substances
- freezing in liquid nitrogen

RULES TO FOLLOW

- User must keep order and clean up after themselves.
- Chemical spills should be removed immediately.
- Turn off lights when leaving room for the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Liquid nitrogen tank N2	Siri Johannesen 4. etg		
Cradle			

RISK ANALYSIS

Risk	Preventive measure
Risk of suffocation by emissions in confined spaces	Be careful when working with and filling of liquid nitrogen. Wear eye protection and appropriate gloves Need regular maintenance and check leakage

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire Blanket
- Eyewash bottles

BL25 316: RESEARCH LABORATORY

Room responsible person: Hilde Barsett

Training responsible person: Supervisor

ROOM ACTIVITIES

- Research
- Use of instruments

REGLER

- The users must keep things in order and tidy up.
- The users must remove paper and glass waste when it's needed.
- Fume cupboards that are not used shall have their hatches closed.
- The lab scales must be cleaned after use.
- Switch off the light in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Rotavapor IKA , VWR	Suthajini Yogarajah		
Fraction collector	Ellen Hanne Cohen		
Phenol/sulfuric acid test equipment			
Laboratory scale			

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear eye protective glasses
Exposure to harmful chemicals	Consult the material safety data sheets for proper handling of chemicals
	Use personal safety equipment when handling chemicals
	Never conduct any experiments outside the fume hoods
	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker

HMS – INSTALLASJONER

- Emergency shower (in the vicinity)
- Fire extinguisher
- Fire blanket
- Eye washer
- Chemical waste containers

BL25 318: INSTRUMENT LABORATORY

Room responsible person: Suthajini Yogarajah
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research
- Use of instruments

RULES TO FOLLOW

- User must keep order and clean up after themselves.
- Chemical spills should be removed immediately.
- Sign in logbok, using instruments
- Turn off lights when leaving room for the day.

Instruments and equipment

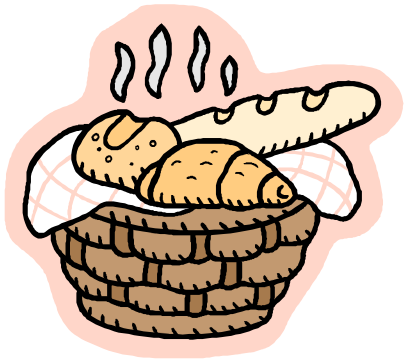
Name/type	Responsible person	Training responsible person	Comments
2 pcs Freeze Drying Christchurch 1-4	Suthajini Yogarajah		
Metanol Bath	Suthajini Yogarajah		
Vacuumpumpe for evaporation	Suthajini Yogarajah		
Water distilling apparatus	Suthajini Yogarajah		
Lab. Dishwasher	Suthajini Yogarajah		
Vacuum centrifuge	Anders Åsberg 4.etg.		

RISK ANALYSIS

Risk	Preventive measure
Incorrect use of instruments and equipment	Read SOP or manual before use
Cracks in the freeze dryer flasks may lead to either explosion or implosion	Always check the flasks to find any cracks before you use the freeze dryer. Always wear protective goggles.
Risk of water leakage	Closing the water supply to the water distilling apparatus outside normal working hours. Do not use the water distilling apparatus and washing machine outside normal working hours.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire blanket
- Eye washer



BL25 330: KITCHEN/OFFICE

Room responsible person: Engineer at the Pharmacognosy group
Training responsible person:

ROOM ACTIVITIES

- Simple food making
- Copying, scanning

RULES (KITCHEN)

- Everyone is obliged to keep things in order in the kitchen.
- If you store food in the kitchen, take care to remove it before it gets poor.
- After making sandwiches or any other food, you have to tidy.
- Dirty dishes have to be put in the dishwasher.
- If there is a posting with the word “WASHED”, you may put the cleaned dishes in the kitchen cupboard. If the diswasher is full of dirty dishes, you may add detergent and start the dishwasher. If you don’t know how to do this, ask the room responsible person.
  (There are some postings in Norwegian at the kitchen’s cupboard doors).

RULES (OFFICE)

-

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Dishwasher	Ing.farmakognosi		
PC	Ellen Hanne Cohen		
Skanner	Ellen Hanne Cohen		
Printer	Ellen Hanne Cohen		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

-

BL25 331: LABORATORY

Room responsible person: Berit Smestad Paulsen
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research
- Use of instruments

RULES

- The users must keep things in order and tidy.
- Switch off the lights in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	**Responsible person**	**Training responsible person**	**Comments**
Rotavapor	Suthajini Yogarajah		
Plateleser	Suthajini Yogarajah		

RISK ANALYSIS

Risk	**Preventive measure**
Exposure to harmful chemicals	Clean up spillage of chemicals immediately
	Always store chemicals in the chemical storage locker
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire blanket
- Eye washer
- Chemical waste containers

BL25 333: LABORATORY

Room responsible person: Berit Smestad Paulsen
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research
- Use of instruments

RULES

- The users must keep things in order and tidy.
- Clean up spillage of chemicals immediately
- Switch off the lights in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Fraction collector	Ellen Hanne Cohen		
Pipettes	Ellen Hanne Cohen		
Heating oven	Room responsible person		
Ultra sonic bath	Room responsible person		
Rotavapor	Suthajini Yogarajah		

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire blanket
- Eye washer
- Chemical waste containers

BL25 334: INSTRUMENTLAB.

Room responsible person: Berit Smestad Paulsen
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research/lab courses
- Use of instruments

RULES

- The users must keep things in order and tidy up.
- The users must remove paper and glass waste when it's needed.
- Fume cupboards that are not used shall have their hatches closed.
- The lab scales must be cleaned after use.
- Switch off the light in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
GC Shimadzu	Ellen H. Cohen		
GC Carlo Erba	Ellen H. Cohen		
PC/Laser printer	Ellen H. Cohen		
HPLC Shimadzu	Ellen H. Cohen		
Radioactive detector HPLC			

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear protective glasses
Exposure to harmful chemicals	Always store chemicals in the chemical storage locker
	Clean up spillage of chemicals immediately
Leakage of combustible gases from gas cylinders. Risk of explosion at a fire.	Refer to the *Laboratory: Safety and the working environment* chapter for proper use and handling of pressureized gas cylinders.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire blanket
- Eye washer

BL25 336: DRUG COLLECTION

Room responsible person: Permanent scientific employees at the department
Training responsible person: Chief of lab courses/supervisors

ROOM ACTIVITIES

- Student's discussion groups
- Drug exhibition

RULES

- Always keep the room tidy.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Blackboard			
Large table			

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire blanket

BL25 339: STUDENTS COURSES' LABORATORY

Room responsible person: Suthajini Yogarajah
Training responsible person: Supervisor

ROOM ACTIVITIES

- Students courses
- Use of instruments

RULES TO FOLLOW

• User must keep order and clean up after themselves.
• Safty cabinets that are not in use shall be closed.
• The weights should be cleaned after each use.
• Turn off lights when leaving room for the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Over weight	Suthajini Yogarajah		
Analysis weight	Suthajini Yogarajah		
UV-photo-meter			
Centrifuge	Suthajini Yogarajah		
pH-meter	Suthajini Yogarajah		
Rotary evaporator (organic solution)	Suthajini Yogarajah		
Water bath	Suthajini Yogarajah		
Chemical Cabinets w/exhaust	Suthajini Yogarajah		

RISK ANALYSIS

Risk	Preventive measure
Incorrect use of instruments and equipment	Read SOP or manual before use
Exposure to hazardous chemicals	Use safety data sheets for proper handling and storage of each chemical
	Personal protective equipment must be used when handling chemicals.
	Chemical spills should be removed immediately.
	Chemicals should not be stored outside the chemical cupboard / fridge.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower(nearby)
- Fire extinguisher
- Fire Blanket
- First aid kit
- Eyewash bottles
- Chemical Cabinets w / exhaust

BL25 339 B: CHROMATOGRAPHY LAB.

Room responsible person: Suthajini Yogarajah
Training responsible person: Supervisor

ROOM ACTIVITIES

- Student Course
- Research
- Use of instruments

RULES TO FOLLOW

- User must keep order and clean up after themselves.
- Safety cabinets that are not in use shall be closed.
- Chemicals should not be stored outside the chemical cupboard / fridge.
- Chemical spills be removed immediately.
- Turn off lights when leaving room for the day

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
TLC tank	Suthajini Yogarajah		
TLC spray Camag	Suthajini Yogarajah		
UV equipment	Suthajini Yogarajah		
Ultrasonic VWR	Suthajini Yogarajah		
Heating cabinet Heraeus	Suthajini Yogarajah		
DCC Chromatography Buchi	Karl Malterud		

RISK ANALYSIS

Risk	Preventive measure
Exposure to hazardous chemicals	Use safety data sheets for proper handling and storage of each chemical

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower(nearby)
- Fire extinguisher
- Fire Blanket
- Eyewash bottles
- Chemical Cabinets w / exhaust

BL25 340: PREPARATION ROOM/COURSES

Room responsible person: Suthajini Yogarajah
Training responsible person: Supervisor

ROOM ACTIVITIES

- Preparation for students courses

RULES TO FOLLOW

• User must keep order and clean up after themselves .
• Safty cabinets that are not in use shall be closed.
• The weights should be cleaned after each use.
• Turn off lights when leaving room for the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Over Weight	Suthajini Yogarajah		
Pipettes			

RISK ANALYSIS

Risk	Preventive measure
Exposure to hazardous chemicals	Use safety data sheets for proper handling and storage of each chemical
	Personal protective equipment must be used when handling chemicals.
	Chemicals should not be stored outside the chemical cupboard / fridge.
	Chemical spills should be removed immediately.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire Blanket
- First aid kit
- Eyewash bottles

BL25 344: LABORATORY

Room responsible person: Ellen Hanne COhen
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research/Lab courses
- Use of instruments

RULES

- The users must keep things in order and tidy up.
- Fume cupboards that are not used shall have their hatches closed.
- Switch off the light in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
BioLC DIONEX	Ellen Hanne Cohen		
PC/Printer HP	Ellen Hanne Cohen		
Water purifying apparatus Millipore	Ellen Hanne Cohen		
HPLC VARIAN HOLGER	Helle Wangensteen		
PC/Printer HP	Ellen Hanne Cohen		
HPLC LaChrom VWR	Helle Wangensteen		
Rotavapor	Suthajini Yogarajah		
Versa Flash Supelco	Helle Wangensteen		

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear protective glasses
Exposure to harmful chemicals	Always store chemicals in the chemical storage locker
	Clean up spillage of chemicals immediately

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Emergency shower (in the vicinity)
- Fire extinguisher
- Fire Blanket
- Eyewash bottles
- Chemical storage locker, ventilated
- Chemical waste containers

BL25 358: BALANCE ROOM

Room responsible person: Suthajini Yogarajah
Training responsible person:

ROOM ACTIVITIES

- Weighing of samples

RULES TO FOLLOW

- User must keep order and clean up after themselves.
- The scale should be cleaned after each use.
- Turn off lights when leaving room for the day.

Instruments and equipment

Name/type	Responsible person	Training responsible person	Comments
Analytical scale Sartorius	Suthajini Yogarajah		

RISK ANALYSIS

Risk	Preventive measure
Exposure of harmful toxic substances when weighing	Wear protective equipment
	Chemical spills should be removed immediately.

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher

BL25 362: LABORATORY

Room responsible person: Anne-Berit Samuelsen
Training responsible person: Supervisor

ROOM ACTIVITIES

- Research
- Use of instruments

RULES

- The users must keep things in order and tidy up.
- Fume cupboards that are not used shall have their hatches closed.
- Switch off the light in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
FPLC-AKTA	Kari Inngjerdigen/Ingvild Austarheim	Kari Inngjerdingen/Ingvild Austarheim	
FPLC Pharmacia	Anne-Berit Samuelsen		
RI-Detektor Shimadzu	Ingvild/Tom-Erik		
BioRad Elektroforese	Ellen H. Cohen	Ellen H. Cohen	
SDS-Page	Ellen H. Cohen		
Heating oven Hetosic			
Smi-pipette	Ellen H. Cohen		
Rovapor	Suthajini Yogarajah		
Heating block for evaporation			
Phenol/sulfuric acid test equipment			

RISK ANALYSIS

Risk	Preventive measure
Accidents and injuries due to improper use of instruments and equipment	Read SOP or user's manual before use
	Always wear protective glasses
Exposure to harmful chemicals	Always store chemicals in the chemical storage locker
	Clean up spillage of chemicals immediately

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- Fire extinguisher
- Fire Blanket
- Eyewash bottles
- Chemical waste containers

BL25 365: CONFERENCE ROOM

Room responsible person: : Ellen Hanne Cohen
Training responsible person:

ROOM ACTIVITIES

- Conference room
- Common room for the Department
- Library room for the Department

RULES

- The users must keep things in order and tidy up.
- Switch off the light in the end of the day.

INSTRUMENTS AND EQUIPMENT

Name/type	Responsible person	Training responsible person	Comments
Common PC	Ellen H. Cohen		
Overhead projector	Ellen H. Cohen		
Wall screen	Ellen H. Cohen		

RISK ANALYSIS

Risk	Preventive measure

INSTALLATIONS REGARDING HEALTH, ENVIRONMENT AND SECURITY

- The room nearby

APPENDICES

PRODUCT LABELLING OF CHEMICALS

HAZARD SYMBOLS WITH HAZARD DESIGNATION

The following hazard codes, hazard symbols and hazard designation apply at labelling of chemicals.

E **O** **F+** **F+** **C**

EXPLOSIVE **OXIDISING** **EXTREMELY FLAMMABLE** **HIGHLY FLAMMABLE** **CORROSIVE**

T+ **T** **N** **Xn** **Xi**

VERY TOXIC **TOXIC** **DANGEROUS FOR THE ENVIRONMENT** **HARMFUL** **IRRITANT**

The hazard symbols must be printed in black on an orange background. The hazard designation must be denoted together with the hazard symbol. The hazard code that is above the symbols (e.g. F, Xi) is not to be included on the hazard label.

HAZARD CLASSES BASED ON RISK PHRASES

Hazard class - § 3 and § 6	**Risk phrases**	**Hazard code**	**Hazard symbol**	**Hazard designation**
Explosive	R2, R3	E	Explosive	Explosive
Oxidising	R7, R8, R9	O	Oxidising	Oxidising
Extremely flammable	R12	F+	Flame symbol	Extremely flammable
Highly flammable	R11, R15, R17	F+	Flame symbol	Highly flammable
Flammable	R10	None	None	None
Very toxic	R26, R27, R28, R39	T+	Skull and crossbones	Very toxic
Toxic	R23, R24, R25, R39, R48	T	Skull and crossbones	Toxic
Harmful	R20, R21, R22, R68, R48, R65	Xn	X-cross	Harmful
Corrosive	R34, R35	C	Corrosive pictogram	Corrosive
Irritant	R36, R37, R38, R41	Xi	X-cross	Irritant
Sensitiser	R42	Xn	X-cross	Harmful

	R43	Xi	X-cross	Irritant
Carcinogenic	R45, R49	T	Skull and crossbones	Toxic
	R40	Xn	X-cross	Harmful
Mutagenic	R46	T	Skull and crossbones	Toxic
	R68	Xn	X-cross	Harmful
Harmful to reproduction	R60, R61	T	Skull and crossbones	Toxic
	R62, R63	Xn	X-cross	Harmful
Dangerous for the environment	R50, R50/53, R51/53, R54, R55, R56, R57, R58, R59	N	Dangerous for the environment pictogram	Dangerous for the environment
	R52, R52/53, R53	None	None	None

HAZARD CLASSES

CRITERIA FOR HSE ASSESSMENT OF CHEMICALS

Colour codes: Acceptable | Within the limit | Not acceptable

Factor assessed	HSE datasheet section	HAZARD CLASS *Lowest hazard class* → *Highest hazard class*				
		1	**2**	**3**	**4**	**5**
Health hazard	15	NO=Label not mandatory	NO=Label not mandatory	Xi = Irritant	Xn = Harmful C = Corrosive R43	T = Toxic T+ = Very toxic R42
Fire hazard	15	NO=Label not mandatory	NO=Label not mandatory	R10, R5, R18, R30, R44	F = Highly flammable	F+ = Extremely flammable O = Oxidising E = Explosive
YL-group	15		00-0	1	2-3	4-5
External environment	15			R52, R53	N = Dangerous for the environment R59	N = Dangerous for the environment R50

(YL: Occupational Health and Hygiene ventilation requirements)

GAS CYLINDERS COLOUR CODES

UiO's gas cylinder supplier AGA has introduced shoulder marking on the gas cylinders in accordance with the new European standard EN 1089-3. The shoulder marking only provides information about the gasses' properties in air, but most pure gasses have been allocated a dedicated colour. More detailed information on the gas cylinder content is to be found on the product label.

SHOULDER COLOUR (EN 1089-3: GENERAL)

Toxic and/or corrosive gasses	Yellow
Flammable gasses	Red
Oxidising gasses	Light blue
Inert gasses	Bright green

SHOULDER COLOUR (EN 1089-3: PURE GASSES)

Acetylene	Maroon
Carbon dioxide	Grey
Oxygen	White
Helium	Brown
Argon	Dark green
Hydrogen	Red
Nitrogen	Black
Nitrous oxide	Blue

CYLINDER COLOURS (AGA GAS SUPPLIER)

Industrial gasses	Black
Acetylene	Maroon
Food industry gasses	Green
Special gasses	Silver-grey
Medical gasses	White

RISK PHRASES

At hazard marking of dangerous chemicals, the following statements (R phrases) must be used to describe the hazards:

R1	Explosive when dry
R2	Risk of explosion by shock, friction, fire or other sources of ignition
R3	Extreme risk of explosion by shock, friction, fire or other sources of ignition
R4	Forms very sensitive explosive metallic compounds
R5	Heating may cause an explosion
R6	Explosive with or without contact with air
R7	May cause fire
R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
R10	Flammable
R11	Highly flammable
R12	Extremely flammable
R14	Reacts violently with water
R15	Contact with water liberates extremely flammable gases
R16	Explosive when mixed with oxidising substances
R17	Spontaneously flammable in air
R18	In use, may form flammable/explosive vapour-air mixture
R19	May form explosive peroxides
R20	Harmful by inhalation
R21	Harmful in contact with skin
R22	Harmful if swallowed
R23	Toxic by inhalation
R24	Toxic in contact with skin
R25	Toxic if swallowed
R26	Very toxic by inhalation
R27	Very toxic in contact with skin
R28	Very toxic if swallowed
R29	Contact with water liberates toxic gas
R30	Can become highly flammable in use
R31	Contact with acids liberates toxic gas
R32	Contact with acids liberates very toxic gas
R33	Danger of cumulative effects
R34	Causes burns
R35	Causes severe burns
R36	Irritating to eyes
R37	Irritating to respiratory system
R38	Irritating to skin
R39	Danger of very serious irreversible effects
R40	Limited evidence of a carcinogenic effect
R41	Risk of serious damage to eyes
R42	May cause sensitisation by inhalation
R43	May cause sensitisation by skin contact
R44	Risk of explosion if heated under confinement
R45	May cause cancer
R46	May cause heritable genetic damage
R48	Danger of serious damage to health by prolonged exposure
R49	May cause cancer by inhalation
R50	Very toxic to aquatic organisms
R51	Toxic to aquatic organisms
R52	Harmful to aquatic organisms
R53	May cause long-term adverse effects in the aquatic environment
R54	Toxic to flora
R55	Toxic to fauna
R56	Toxic to soil organisms
R57	Toxic to bees
R58	May cause long-term adverse effects in the environment
R59	Dangerous for the ozone layer
R60	May impair fertility
R61	May cause harm to the unborn child
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
R64	May cause harm to breast-fed babies
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness
R68	Possible risk of irreversible effects

RISK PHRASES IN COMBINATION

When several phrases are combined in one sentence, the phrases must be as specified below. The combination is considered to be one sentence:

R14/15	Reacts violently with water, liberating extremely flammable gasses
R15/29	Contact with water liberates toxic, extremely flammable gases
R20/21	Harmful by inhalation and in contact with skin
R20/22	Harmful by inhalation and if swallowed
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R21/22	Harmful in contact with skin and if swallowed
R23/24	Toxic by inhalation and in contact with skin
R23/25	Toxic by inhalation and if swallowed
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R24/25	Toxic in contact with skin and if swallowed
R26/27	Very toxic by inhalation and in contact with skin
R26/28	Very toxic by inhalation and if swallowed
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R27/28	Very toxic in contact with skin and if swallowed
R36/37	Irritating to eyes and respiratory system
R36/38	Irritating to eyes and skin
R36/37/38	Irritating to eyes, respiratory system and skin
R37/38	Irritating to respiratory system and skin
R39/23	Toxic: danger of very serious irreversible effects through inhalation
R39/24	Toxic: danger of very serious irreversible effects in contact with skin
R39/25	Toxic: danger of very serious irreversible effects if swallowed
R39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/26	Very toxic: danger of very serious irreversible effects through inhalation
R39/27	Very toxic: danger of very serious irreversible effects in contact with skin
R39/28	Very toxic: danger of very serious irreversible effects if swallowed
R39/26/27	Very toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/26/28	Very toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/27/28	Very toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/26/27/28	Very toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R42/43	May cause sensitisation by inhalation and skin contact
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R68/20	Harmful: possible risk of irreversible effects through inhalation
R68/21	Harmful: possible risk of irreversible effects in contact with skin
R68/22	Harmful: possible risk of irreversible effects if swallowed
R68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin
R68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
R68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
R68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed

SAFETY PHRASES

At hazard marking, the following phrases must be used to describe necessary preventive measures for safe handling and use of the chemicals:

S1	Keep locked up
S2	Keep locked up and out of the reach of children
S3	Keep in a cool place
S4	Keep away from living quarters
S5	Keep contents under ... (appropriate liquid to be specified by the manufacturer, importer or distributor)
S6	Keep contents under ... (inert gas to be specified by the manufacturer, importer or distributor)
S7	Keep container tightly closed
S8	Keep container dry
S9	Keep container in a well-ventilated place
S12	Do not keep the container sealed
S13	Keep away from food, drink and animal feeding stuffs
S14	Keep away from ... (incompatible materials to be indicated by the manufacturer, importer or distributor)
S15	Keep away from heat
S16	Keep away from sources of ignition - No smoking
S17	Keep away from combustible material
S18	Handle and open container with care
S20	When using do not eat or drink
S21	When using do not smoke
S22	Do not breathe dust
S23	Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer, importer or distributor)
S24	Avoid contact with skin
S25	Avoid contact with eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S27	Take off immediately all contaminated clothing
S28	After contact with skin, wash immediately with plenty of ... (to be specified by the manufacturer, importer or distributor)
S29	Do not empty into drains
S30	Never add water to this product
S33	Take precautionary measures against static discharges
S35	This material and its container must be disposed of in a safe way.
S36	Wear suitable protective clothing
S37	Wear suitable protective gloves
S38	In case of insufficient ventilation wear suitable respiratory equipment
S39	Wear eye/face protection
S40	To clean the floor and all objects contaminated by this material use ... (to be specified by the manufacturer, importer or distributor)
S41	In case of fire and/or explosion do not breathe fumes
S42	During fumigation/spraying wear suitable respiratory equipment (appropriate wording to be specified by the manufacturer, importer or distributor)
S43	In case of fire use ... (the manufacture, importer or distributor must indicate in the space the precise type of fire-fighting equipment. If water increases the risk add - Never use water)
S45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
S46	If swallowed, seek medical advice immediately and show this container or label
S47	Keep at temperature not exceeding ... ° C (to be specified by the manufacturer, importer or distributor)
S48	Keep wet with ... (appropriate material to be specified by the manufacturer, importer or distributor)
S49	Keep only in the original container
S50	Do not mix with ... (to be specified by the manufacturer, importer or distributor)
S51	Use only in well-ventilated areas
S52	Not recommended for interior use on large surface areas
S53	Avoid exposure - obtain special instructions before use
S56	Dispose of this material and its container at hazardous or special waste collection point
S57	Use appropriate containment to avoid environmental contamination (Ensure safe packaging to prevent environmental contamination).
S59	Refer to manufacturer/importer or distributor for information on recovery/recycling
S60	This material and its container must be disposed of as hazardous waste
S61	Avoid release to the environment. Refer to special instructions/HSE safety data sheet for further information
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label
S63	In case of accident by inhalation: remove casualty to fresh air and keep at rest
S64	If swallowed, rinse mouth with water (only if the person is conscious)
S210	Use compressed air or fresh air line breathing apparatus in confined spaces

SAFETY PHRASES IN COMBINATION

When several phrases are combined in one sentence, the phrases must be as specified below. The combination is considered to be one sentence:

S1/2	Keep locked up and out of the reach of children
S3/7	Keep container tightly closed in a cool place
S3/9/14	Keep in a cool, well-ventilated place away from … (to be specified by the manufacturer, importer or distributor)
S3/9/14/49	Keep only in the original container in a cool, well-ventilated place away from ... (incompatible materials to be indicated by the manufacturer, importer or distributor)
S3/9/49	Keep only in the original container in a cool, well-ventilated place
S3/14	Keep in a cool place away from ... (incompatible materials to be indicated by the manufacturer, importer or distributor)
S7/8	Keep container tightly closed and dry
S7/9	Keep container tightly closed and in a well-ventilated place
S7/47	Keep container tightly closed and at temperature not exceeding ... ° C. (to be specified by the manufacturer, importer or distributor)
S20/21	When using do not eat or drink or smoke
S24/25	Avoid contact with skin and eyes
S27/28	After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of ... (to be specified by the manufacturer, importer or distributor)
S29/35	Do not empty into drains; dispose of this material and its container in a safe way
S29/56	Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
S36/37	Wear suitable protective clothing and gloves
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S36/39	Wear suitable protective clothing and eye/face protection
S37/39	Wear suitable gloves and eye/face protection
S47/49	Keep only in the original container at temperature not exceeding ... ° C. (to be specified by the manufacturer, importer or distributor)

ROUTINE TEMPLATE FOR ROOM - BL2X XXX: XXXXX

(The routine was last updated on 11.05.2010)

Main/Room responsible: xxxxx
Training responsible: xxxxx

ACTIVITIES

- xxxxx

RULES

- xxxxx

INSTRUMENTS/EQUIPMENT

Name/type	Responsible for Instruments	Responsible for Training	Comments
Xxxx			

RISK ASSESSMENT

Risk	Preventive measure

HSE INSTALLATIONS

- xxxxx

LIST OF TELEPHONE NUMBERS AND ADDRESSES

	Name	Address	Tel. no.:	E-mail/Web page
FIRE 110	Fire Services emergency no.		110	
	Fire safety at UiO: Fire safety advisor	Technical Department PO 1077 Blindern	22 85 **67 25**	brannvern@ta.uio.no http://www.uio.no/for-ansatte/drift/sikkerhet/brannvern/
AMBULANCE 113	Ambulance emergency no.		113	
	Oslo A&E		22 93 22 93	http://www.oslolegevakt.no/
	Ullevål University Hospital	Switchboard	02770	
			22 11 80 80	
		Emergency reception	22 11 73 50	
		Ophthal-mology Dept.	22 11 85 45 22 11 85 47	
	Health Services, UiO Emergency help		22 85 **31 74**	http://www.sio.no/wps/portal/sio/helse?reset=true
	Norwegian Poison Information Centre		22 59 13 00	http://www.giftinfo.no/
	Taxi – Emergency help		22 38 80 50	
POLICE 112	Police emergency no.		112	
	Security and alarm centre, UiO EMERGENCY tel.		22 85 **66 66**	
	Security and alarm centre, UiO Non-emergency messages.		22 85 **50 07**	vaktalarm@admin.uio.no https://www.uio.no/for-ansatte/drift/sikkerhet/beredskapsplan/
UiO (Blindern) Switchboard: **9**/ 22 85 **50 50**	School of Pharmacy: Director, School of Pharmacy	PO 1068 Blindern	22 85 **65 86**	
	School of Pharmacy: Reception	PO 1068 Blindern	22 85 **65 85** VIP **31494**	instituttkontoret@farmasi.uio.no http://www.farmasi.uio.no
	Technical Dept. Lower Blindern: Operations office		22 85 **72 93**	teknisk-nedre@admin.uio.no http://www.admin.uio.no/ta
	Department of Chemistry: Head of Safety		22 85 **54 69** 91 33 71 73 VIP **31154**	vidar.blekastad@kjemi.uio.no
	Department of Chemistry: Reception		22 85 **54 46**	ekspedisjonen@kjemi.uio.no http://www.kjemi.uio.no
	Section for HSE at UiO		22 85 **88 95**	hms-post@admin.uio.no http://www.uio.no/om/organisasjon/adm/opa/hms/
	Labour Inspection Authority 2nd District		23 08 05 05	http://www.arbeidstilsynet.no/